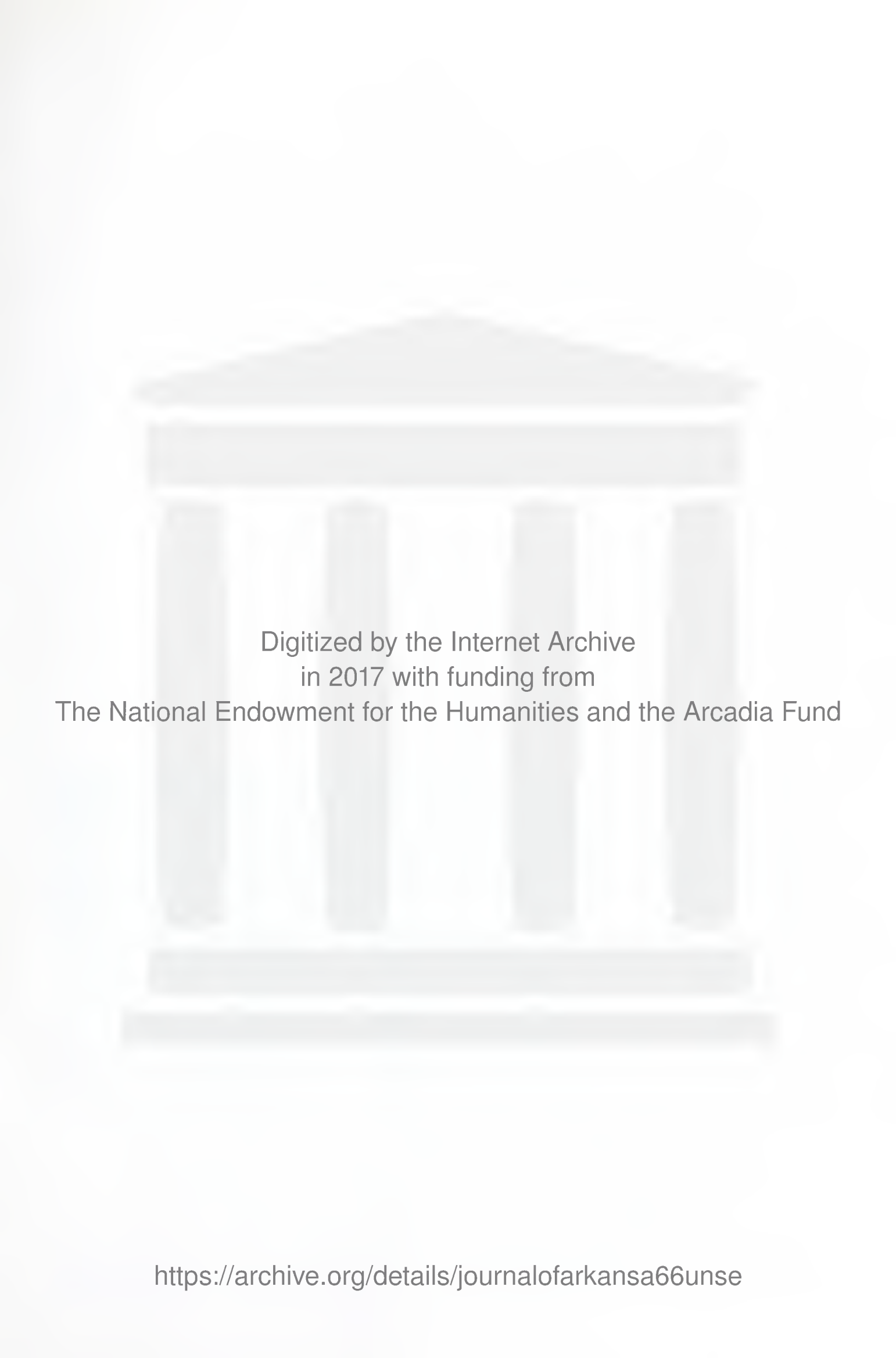

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June, 1969

THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 66 No. 1

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1969-1970

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PROCEEDINGS

93rd. Annual Session

ARKANSAS MEDICAL SOCIETY

Arlington Hotel, Hot Springs — April 27 - 30, 1969

FIRST MEETING

HOUSE OF DELEGATES

The first meeting of the House of Delegates convened at 1:00 P.M. on Sunday, April 27th, 1969, in Room "C" of the Arlington Hotel Conference Center with Vice Speaker Amail Chudy presiding. Invocation was by G. Thomas Jansen of Little Rock.

The Executive Vice President, Mr. Schaefer, called the roll of delegates. The following delegates, officers, and members seated as delegates by action of the House were present: ARKANSAS, R. H. Whitehead; ASHLEY, E. C. Gresham; BAXTER, John F. Guenthner; BOONE, Rhys A. Williams; BRADLEY, William C. Whaley, Jr.; CLARK, Eli Gary; COLUMBIA, Paul Sizemore; CRAIGHEAD-POINSETT, Charles Swingle; CRAWFORD, Millard C. Edds; DALLAS, John H. Delamore; DREW, C. Lewis Hyatt; GARLAND, M. R. Springer, Jr., Cecil Parkerson, John W. Trieschmann; GRANT, Curtis B. Clark; GREENE-CLAY, Asa A. Crow; HEMPSTEAD, C. Lynn Harris; HOT SPRING, R. V. McCrary; INDEPENDENCE, Jim E. Lytle; JEFFERSON, Ross E. Maynard, William Joe James; JOHNSON, James M. Kolb; LEE, Dwight W. Gray; LOGAN, W. Duane Jones; LONOKE, Fred E. Inman, Jr.; MISSISSIPPI, Frank Rhodes; OUACHITA, James Guthrie; PHILLIPS, Reuben L. Chrestman, Jr.; POPE-YELL, Charles F. Wilkins, Jr., Roy Millard; PULASKI, Frank T. Padberg, James L. Smith, F. R. Buchanan, Frank E. Morgan, Robert Watson, Gilbert O. Dean, Edgar J. Easley, Samuel B. Thompson, William S. Orr, Jr., James G. Stuckey, Jr., Bill G. Floyd, G. Thomas Jansen, T. J. Smith, James V. Flack, Jr.; SEBASTIAN, L. A. Whittaker, A. C. Bradford, Carl L. Williams, Annette V. Landrum; SEVIER, Jim C. Citty; UNION, George C. Burton; WOODRUFF, Basil E. Hendrixson; COUNCILORS, Paul Gray, Hugh Edwards, L. J. Pat Bell, T. E. Townsend, A. W. Lazenby, Kenneth R. Duzan, George F. Wynne, Karlton Kemp, John P. Wood, Jack Kennedy, Robert F. McCrary, W. Payton Kolb, James R. Morrison, H. V. Kirby, A. S. Koenig; PRESIDENT, H. W. Thomas; PRESIDENT-ELECT, Ross Fowler; FIRST VICE PRESIDENT, Harry Hayes, Jr.; VICE SPEAKER, Amail Chudy; SECRETARY, Elvin Shuffield; TREASURER, Ben N. Saltzman;



Dr. T. E. Townsend of Pine Bluff reports to the House of Delegates as Chairman of the Council.

PAST PRESIDENTS, Joe Verser, W. A. Snodgrass, Jr., C. Lewis Hyatt, James M. Kolb, C. R. Ellis, and L. A. Whittaker.

James M. Kolb, Sr., Chairman of the Credentials Committee, reported that there were eighty-one delegates and officers present, constituting a quorum.

Dr. Chudy introduced Mrs. C. D. Burroughs of Pine Bluff, president of the Woman's Auxiliary to the Arkansas Medical Society, who spoke briefly reviewing the activities of the Auxiliary during the past year.

The president-elect of the Auxiliary, Mrs. Carl Parkerson of Hot Springs, was also introduced by Dr. Chudy.

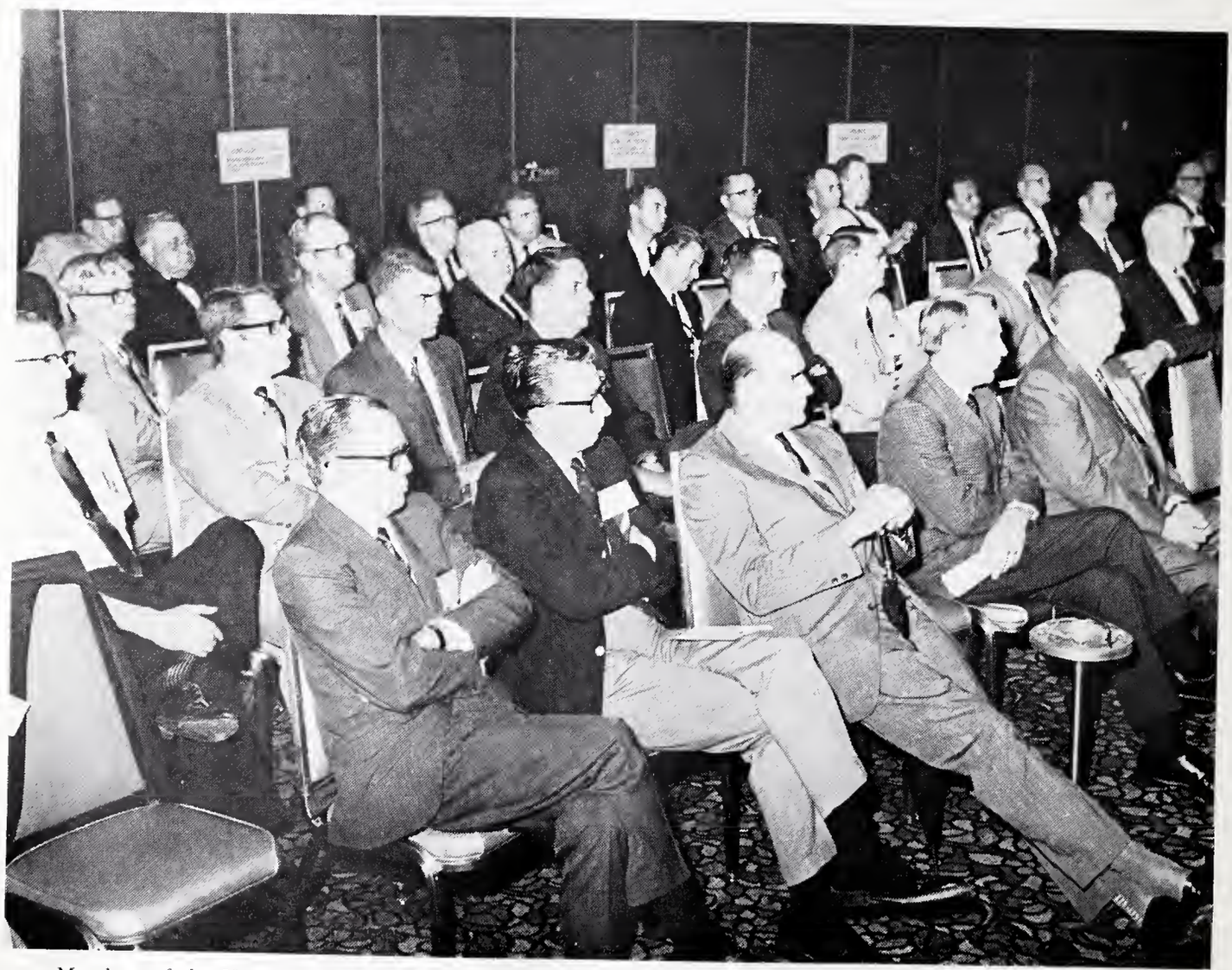
The Vice Speaker then called on the chairman of the Sub-Committee on Liaison with the Nursing Profession, Frank Padberg. Dr. Padberg introduced a representative of the Arkansas State Nurses' Association, Nettie Jane Goss, who made the following address:

REPORT FROM THE ARKANSAS STATE NURSES ASSOCIATION

"I would first like to express the appreciation of the nurses in Arkansas for the opportunity you have afforded them this afternoon. It is hoped that the present and future status of nursing in Arkansas can be explored in the perspective not alone of those who are primarily interested in the health field, but in the perspective of those individuals with whom we must cooperate and from whom we must get help and support if we are to successfully accomplish the goals to which we have directed our attention.

"Of concern to us is the education of nurses, for perhaps one of the most fundamental changes that has come about in nursing is in the educational process. This has come about as a result of the changing image of nursing on the part of the general public as well as the nurses themselves. We now conceive nursing care as a delivery of services to the whole individual, assisting in every way possible to meet not only his physical needs but also his emotional, spiritual, and social needs.

"Until the last few years, nurses were prepared to deliver these services in hospital based schools. However, due to increasing costs to the patient and the student, the



Members of the House of Delegates give rapt attention to proceedings at the meeting on Sunday, April 27th.

schools were faced with a dilemma. Increasing costs to the student for a terminal program made it more difficult to attract qualified students. Many felt if they had to pay as much to go to a hospital school as to college, they would choose college because of the many other advantages offered. If the hospital kept the cost at a minimum to the student then the cost to the patient had to be increased, because someone had to pay for nursing education. Therefore, hospital based programs are phasing into providing facilities as the clinical laboratories for nursing programs affiliated with institutions of higher education.

"Now, a large number of nurses are being prepared in a junior or community college. These are known as Associate Degree Programs and the graduates are prepared to give care to patients as beginning general duty nurses in a hospital.

"The other programs preparing professional nurses for Arkansas are at the baccalaureate level. Their graduates are prepared to make sound judgments based on, in depth, scientific principles and concepts supplied from a broad base of arts, humanities, and services in solving nursing problems and planning nursing action that is creative, innovative, originative, and applicable to any situation.

"The other educational programs in nursing are directed toward the preparation of licensed practical nurses. They prepare workers who will share in giving direct care to patients.

"We recognize there remain gaps in nursing education. Is there another approach so there could be upward mobility without a time penalty? The nursing leaders are looking closely at our own system of education to see if we can close some of the gaps and provide not only more manpower but also more qualified manpower. To be honest we do not know how the A.D. graduate will affect staffing and other aspects of nursing care because our experience with graduates of these programs has thus far been very limited. We already recognize the need for continuing education and at this point, through organized efforts, are defining the roles and expectations of these graduates.

"Aside from formal education, we consider continuing education a must for those employed in nursing. Through the State Nurses' Association and the Arkansas League for Nursing every health agency employing nurses is encouraged to have some type of continuing education program for all categories of health personnel.

"The Arkansas League for Nursing has since 1961 sponsored the Professional Nurses Short-term Traineeship Program covering various clinical subjects as well as administrative skills. Approximately 233 professional nurses per year have availed themselves of these continuing education programs.

"Another project of the Arkansas League for Nursing has been the assistance in continuing education for nursing home personnel. This is being done through a three-year grant with workshops being held in ten areas of the State. The Arkansas Regional Medical Program has recently awarded the League a grant for continuing education programs in heart disease, cancer, and stroke. These programs will be State-wide and will include participation of registered nurses, practical nurses, and citizens. Physicians will be asked to participate as faculty members.

"Another major concern for us has been in the area of manpower. More and more the R.N. seems to be disappearing from the scene and the most recent statistics show that Arkansas now has 142.2 registered nurses per 100,000 population. Even this figure is somewhat unrealistic because it does not reveal the geographic distribution nor the number available for employment. Other publications have revealed a manpower shortage in nearly all of the health fields, and because it was also of national concern there were federal funds made available to states to establish offices and personnel to try to find ways this shortage might be alleviated. After initial contacts with all of the allied health organizations and some preliminary surveys, the Arkansas State Nurses' Association became the contractor for the Arkansas Health Manpower Project. The project began June 26, 1967, and we now have a contract to continue through November, 1969. There is full realization that we must find ways to continue the project and ways and means are already being explored for this purpose.

"Since professional nurses seem to have been in the shortest supply, much of the efforts of the coordinator for the project have been directed toward the inactive nurses. 1968 license renewals show the following to be true of nurses in Arkansas. Number of nurses working, 2,821; number not working, 849. These figures represent the latest available since we now have biennial registration.

"There are various strong factors which through surveys, personal contacts and other means revealed some of the reasons why part of these 849 do not return to work. Day care or lack of competent day care service for children and/or senior adults probably head the list. The cost for these services, in comparison to salary factors in an overall low per capita income state, certainly does not present the essential incentive or motivating factor to encourage



The new Society President, Dr. Ross Fowler, presents plaque of appreciation to the outgoing President, Dr. H. W. Thomas of Dermott. Inaugural Banquet, Tuesday, April 29th.

the nurse to continue or to renew her commitment to nursing.

"It was also recognized through these surveys that there are extremes of apathy prevailing in some geographical areas of the State. This leaves much to be desired in planning action toward resolving health manpower needs in the State. The mandate of society to comprehend the need for health care rehabilitation, the well-being of all our citizens, the need to review our systems of providing health care, quality service and our utilization of already inadequate numbers of health personnel, is slow and difficult to communicate.

"During the 21 months of the project, 154 registered nurses have had refresher courses in nine hospitals in the State. Of the 154 who took the course, 151 have returned to employment either full time or part time.

"There is reason to believe that more of the 'refreshed' nurses might return to work, at least part time, if nursing services could develop staffing patterns which might make it possible to use some of these individuals less than eight hours a day. Of course, week-end and holiday coverage is a problem in all health care facilities and the use of part-time people sometimes increases other personnel problems unless policies are established and enforced that even part-time personnel have to take their share of week-ends. We have to face the fact that the reason many R.N.s work part-time is that their husbands don't want their wives working on week-ends when they are off; their children are in school Monday through Friday, and they need time on the week-ends to care for home responsibilities, and to be very honest some nurses just don't want to work week-ends because 'that's when the action is.' One thing is being done to try to overcome the week-end and holiday problem, and that is offering additional compensation for work on these days. Whether this will solve the problem or not remains to be seen.

"Another problem, made even more significant in some of the surveys done in the Refresher Project, is compensation for delivery of services. Not only has Arkansas been low in numbers per capita but also in salary as compared to other states. We have recognized that the economy of Arkansas is also low compared to other states but competition has caused nursing in Arkansas to take a long hard look at our salary structure in order to retain as many nurses as we can. The most recent statistics reveal that the median salary of a nurse in Arkansas is $450.00 which is $150.00 below the national median. Taking into consideration the factors of child care, buying uniforms, and transportation, is it little wonder that pure economics is a very dominate factor in the number available to deliver health services to the people of Arkansas.

"The Arkansas State Nurses' Association, which is the official spokesman for the nursing profession in the State, has twice adopted salary goals similar to those of the National Organization and have continuously encouraged employers of nurses to try to meet these goals. Some employers are, some aren't, but the employer is coming closer in the metropolitan area. There is committee structure in the State Oragnization and in district organizations, that works continuously for the betterment of employment conditions.



Dr. and Mrs. Elvin Shuffield (foreground) and Dr. and Mrs. Ross Fowler (background). Inaugural Banquet, Tuesday, April 29th.

"At the annual convention of the Association last fall, minimum employment standards for registered nurses were adopted and this information has been sent to employers of nurses, at least in all the health agencies. Arkansas has not yet fully developed an economic security program. However, in order to meet our obligation to all nurses, efforts are being continued to develop such a program in order that the Association can offer assistance to those for whom negotiation seems difficult or impossible.

"Now for a crucial question! Since educational patterns are changing, and we know numbers are not readily available and probably will not be, what can we do to produce more and better health care with the existing supply of professional nurses and how can we maximize the usefulness of additional numbers and categories of personnel being developed to assist in the delivery of health services? The following is quoted from the President's National Advisory Commission on Health Manpower 1967 Report: 'If additional personnel are employed in the present manner and within the present pattern and "systems" of care, they will not avert, or even perhaps alleviate the crisis. Unless we improve the system through which health care is provided, care will continue to become less satisfactory, even though there are massive increases in cost and in number of health personnel . . . because the present system channels manpower into inefficient and inappropriate activities, added numbers by themselves cannot be expected to bring much improvement.'

"Looking at our manpower situation we are continuing to direct the efforts of the nursing organization to improve the productivity and efficiency of the present source. There is no question that we need a great deal more knowledge and experimentation on the optimal use of manpower but here tradition has been somewhat binding and we experience the same resistance to change as is found in many other areas. Utilization patterns are generally based on traditional and untested assumptions, i.e., the more nurses employed in the hospital, the more and better the patient care. However, this is not always true.

"Faced with a dearth of registered nurses, we have in many instances chosen to establish a format of nursing care whereby care is given through others, 'others' being licensed practical nurses and nursing aides. Thus nurses have become managers of care rather than providers of care. Because of large numbers of very diversely and frequently very poorly prepared nursing personnel, registered nurses have been removed almost completely from any direct contact with patients in their care and it is axiomatic that care can be no more expert than the level of the practitioner giving the care. Words do not provide expert care. Quality care can be delivered only by persons thoroughly familiar with the scientific knowledge necessary to accomplish this end.

"To make a bad situation worse, most nursing services have succumbed to functional assignments, i.e., a desk nurse or if you prefer a charge nurse. She must be all things to all people and her clinical knowledge and competencies are many times either 'underused' or not used at all. Task specialization takes precedence over mastering the knowledge needed to manage the clinical process of care. Impersonal, mechanical, routinized, and stereotyped nursing care is the end result.

"We have rationalized this type of professional behavior by asserting that we are attempting to supply patients with maximal nursing care within the resources at our disposal. In reality we are depriving the patient of expert clinical care and we are concentrating on things and personnel, not on the rich supply of knowledge which we could share with the physician for the benefit of the patient. Continuing education might be attractive for the R.N. if she could see that increasing her knowledge would be of benefit to the patient and/or the physician and not to the desk, which in most instances she must stay behind.

"One factor which forces some nurses to pursue this course of action is that only in upward mobility is there further monetary reward. We are trying, in Arkansas, to encourage financial reward for lateral mobility which would help to keep some and maybe all interested in clinical nursing. Let me emphasize at this point that no nursing program in Arkansas has basically prepared their graduates to assume the role most of them have to assume upon graduation. In fact, most of them would be more comfortable in working directly with patients and assisting other personnel as needed. Even so, in place of giving up many hospital administrative functions we have chosen another way out and patient care takes on a form of being governed by rules rather than by the condition and needs of the patient.

"In order to accomplish some change in our present system of health services, the University of Arkansas School of Nursing has developed the professional nurse practitioner.

"This role has developed from the philosophy that nursing is a clearly formulated health service to indi-



The "Splash In" was complete, with "Demonstrator." Inaugural Banquet, Tuesday, April 29th.

viduals and their families and that needs which require nursing intervention may range widely within the dimensions of illness and of wellness. Such needs are not limited to locale or culture and the professional nurse must be able to work with people whenever these needs arise. It is believed that nursing can be described through a body of knowledge which is constantly enlarging through search by professional practitioners, through identified performance behaviors which are being clarified continuously in an evaluation process, and through evolving professional roles which synthesize knowledge and behavior in the deliberate action required for effective nursing intervention.

"Within this context, the major focus of the University program is to evolve the development of compassionate, professional nurse practitioners with competencies in these roles: (1) self-directive judgment about professional nursing intervention; (2) health care of individuals and groups through shared partnership with physician; (3) nursing team leadership; and (4) as a sharing coordinator with the doctor of the health team.

"If we as nurses could establish effective utilization of existing personnel what would be most helpful to complete our aims for better patient care? We would suggest at this point—more dialogue between the nursing and medical professions, per se, as well as perhaps more consideration by the physician that the physician and the nurse can be sharing partners in the delivery of health services. This sharing partnership is perhaps a new concept but in essence it is the extension of an older one. Nurses simply want to be a part of planning the therapeutic approach to the patient. They should recognize the independent nursing functions such as being able to determine when a patient's temperature should or should not be taken rather than following a prescribed set of rules or idiosyncrasies of certain physicians.

"Intake and output and turning patients are but two other examples of independent nursing functions which we hope might eventually be recognized as within the prerogative of nursing judgments not requiring a physician's order. We might go so far as to suggest a patient's elimination needs might be a nursing judgment except in certain specified instances which we would expect to be controlled by the physician. Another nursing judgment might keep some physicians from being disturbed at all hours of the night to verify repeating certain narcotic and sedative medications. For instance, a patient has an order for an H.S. hypnotic but by 2 a.m. still can't sleep. Taking all factors into consideration, couldn't the nurse use her judgment as to whether or not to repeat the dose rather than disturb the physician? Now that we are assuming more and more dependent functions does it seem too



Mr. William Dillard makes presentation of $2,500 check representing a contribution from him and his wife to the Medical Education Foundation for Arkansas. Accepting the check is Dr. Robert Watson, President of MEFFA. Inaugural Banquet, Tuesday evening, April 29th.

much to ask that more consideration be given to our independent functions? This is, of course, with the recognition that nursing services make it possible for the registered nurses' talents and knowledge to be used most effectively. Admittedly, it might not be possible under some of the existing circumstances.

"As to the continuation of dialogue between the two associations, we are most pleased with the progress that the liaison committee between the State Nurses' Association and the State Medical Society has made under the leadership of Dr. Frank Padberg. The functions of such a committee identify five main objectives with the most significant perhaps being to identify and/or consider problems and trends in patient care directly affecting practice and other areas of mutual concern to physicians and nurses. We hope eventually this type of committee could function at a district level.

"Thus far there has been no mention of a group known as the State-wide Planning Committee for Nursing in Arkansas. This Committee is composed of members of both nursing organizations and had its inception in June of 1966 to study what we as nurses could do about some of the critical problems involving nursing in Arkansas. At various times members of other health disciplines and interested citizens have either served on the Committee or have been resource persons for specific projects. Presently, the Committee membership is confined to nurses representing various geographic areas of the State as well as various nursing specialties. Areas receiving emphasis are: (1) education; (2) continuing education; (3) practice and utilization; (4) recruitment and personnel needs. This committee at present is placing emphasis on utilization. Sub-committees have been established to determine various nursing roles in practice and education with representatives of service and education on each committee. With these definitions of role expectations, employers of nursing would be provided with valuable information to plan for effective utilization as well as continuing education needs.

"The State Nurses' Association is seeking funds to employ a field-service representative to assist nurses and employers of nursing with such problems. At their last Board of Directors meeting a special continuing fund which will be supported by memorials and other gifts was established to honor excellence in clinical nursing which is part of the lateral mobility previously mentioned.

"Another area of concern is that of licensure, and we are beginning to think seriously if we are jeopardizing the patient by continuing to renew the license of a nurse who has not practiced nursing in five years. Our present laws are almost akin to the theological belief of 'once saved, always saved' and our laws now essentially say 'once a nurse, always a nurse.' But our experiences with some of the nurses being refreshed have somewhat proven otherwise. The community action programs that are springing up preparing 'technicians' are another reason to look at licensure.

"For we are not standing still and nurses are attempting to improve nursing in Arkansas, which ultimately will mean better care to our patients, your patients. We solicit your support for our endeavors. We want to work with you. There are changes which both groups must accept to accomplish certain goals. They may not all be to our liking, but neither are all the social changes. As long as we live in such a dynamic society we need to employ thoughtful analysis, a strategic use of abundance of available knowledge, and a willingness to overcome the lethargy of tradition and attitudes of complacency.

"Thank you again for the opportunity of letting us present nursing in Arkansas. To my knowledge this is a first and we are most grateful."

* * *

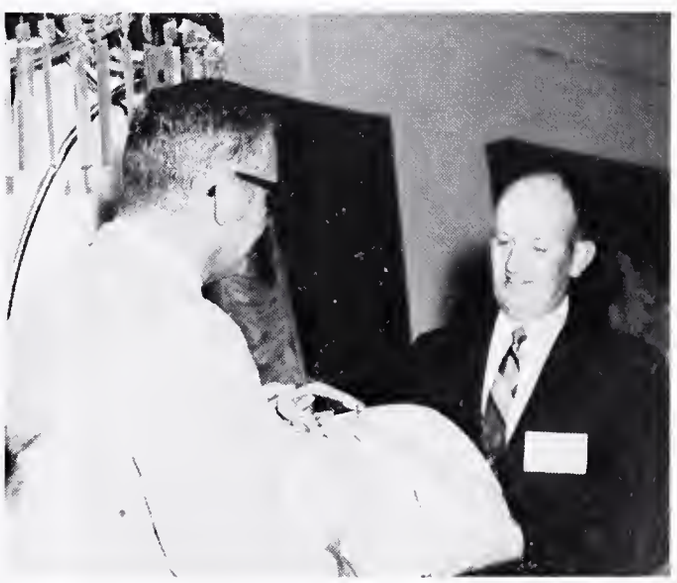
Mr. Donald C. Thompson and Mr. Richard S. Cooper, students at the University of Arkansas School of Medicine, reported briefly on the activities of the Arkansas Chapter of the Student American Medical Association.

The House then heard a report on Arkansas Blue Cross-Blue Shield from its president, Mr. Sam M. Butler.

Dr. Chudy then introduced H. W. Thomas of Dermott, for this "Address of the President." Dr. Thomas spoke as follows:

ADDRESS OF THE PRESIDENT

"Mr. Speaker, fellow physicians and guests. Just one year ago you honored me with the highest office in the Arkansas Medical Society. *For this*, I am humbly grateful to you. We come now to the yearly ritual of the President's Address, which traditionally is a sort of accounting for the past year's stewardship—a focusing of attention and a rousing admonition to 'fight, team, fight' in meeting the challenges of the future. Now most of you know by this time that I'm no conformist. You don't expect a traditional President's Address from me. In fact—



Dr. W. G. Klugh, Jr., of Hot Springs, Chairman of the Golf Tournament Committee, presents a prize to one of the top winners, Dr. Harold D. Langston of Little Rock.

you don't know exactly what to expect—and I know some of you are just, sort of, holding your breath, hoping I won't say what you're afraid I'll say. I assure you, if I think it needs saying, I'll say it.

"By way of report, I'll just relate that in the past year, I've represented you on well over 100 occasions in a half dozen different states and traveled many thousands of miles in attempting to represent you—the Arkansas Medical Society—in the way in which I truly felt that the great majority of you wanted and deserved to be represented. There were some places I should have gone but didn't. There were some things I should have said but didn't, and there were some things I shouldn't have said—but did. As your president, I've come to grips, with the help of many of you, with such problems as Medicare, Medicaid, CHAMPUS, RMP, Comprehensive Health Planning, Rehabilitation Programs, Revised Abortion Laws, Medical Center plans, problems and budgets, Continuing Education Programs, Tuberculosis Control, Anatomical Gift Laws, Penitentiary Health Problems, Registration of Paramedical Personnel, Blue Cross-Blue Shield, private insurance programs, an occasional component county society (thank God, it's only an occasional one) which doesn't have the backbone to internally police itself. (Incidentally, those of you here today from the exceptional county society that doesn't have the *guts* to do its job know who you are), and many, many other problems incident to the day-to-day operation of a State Medical Society. I've truly enjoyed it—most of it, that is. But we don't elect presidents just so that they may enjoy the experience.

"There's work to be done—much work! The medical profession today is beset by antagonists on all sides. The individual doctor is usually loved and respected—yes, almost revered, by his patients. Yet, collectively, as a profession, we've never been more maligned than we are today. Our own Federal Government has conducted a campaign of vilification and falsification against us. The Department of H.E.W., with whom we are forced to deal daily, has lied to us and lied about us. Organized labor, under the leadership of Walter Reuther (who owes his very life to modern medicine) openly conducts a brazen



A portion of the head table at the Inaugural Banquet, Tuesday evening, April 29th. Dr. Elvin Shuffield (left), Secretary of the Society, and Dr. and Mrs. Ross Fowler. Dr. Fowler was installed as President at the Banquet.

campaign to take over the practice of medicine and degrade it to the status of a commissar-dominated trade union. And yet, these evil forces have a strong ally—a Trojan Horse, so to speak, within our own ranks—the occasional 'rotten apple' to be found in every barrel! I refer, of course, to that small—almost infinitestimal—fragment of our membership who chisel, cheat, and gouge the patient, the taxpayer and their fellow physicians.

"It's your job and mine to expose them and stamp out their unethical practices. I'm *proud* of the activities of the Arkansas Medical Society in this area. This work is being done quietly, ethically, and effectively. The forces of socialist totalitarianism which are dedicated to destroying freedom in America, including the private practice of medicine, would, of course, delight in seeing the medical profession stick its head in the sand and refuse to participate in the multiple programs designed to achieve their purposes. My immediate predecessor, Dr. Joe Norton, very articulately expressed to you repeatedly the need for physician involvement in all the various health activities and agencies seeking to fragment and control us. This urgent need for you and your fellow physicians to become involved in and actively participate in these various programs on local, regional and state levels, *I cannot over-emphasize!*

"*One other thing:* If we are to survive as a profession, rather than as laborers in a socialist trade union, then we must put aside petty partisanship and work for the common good. What do I mean by that? Simply this—during the last 36 months, there has been a continuing effort on the part of a small minority to inject local partisan pride and ambition into their every activity concerning the Arkansas Medical Society. I refer to the fact that almost every gathering or activity attended by this faction ends on the note 'when are we gonna move the headquarters back to Little Rock?' I would remind you that the headquarters of the Arkansas Medical Society was moved away from Little Rock a number of years ago for very *compelling reasons.* These reasons still exist today as evidenced by activities of this very group in recent weeks and recent months. Our colleagues in the dental profession have seen fit to locate their headquarters away from Little Rock, apparently for similar reasons. So, speaking for the vast majority of the membership, I believe, I can say, in answer to the question 'when are we gonna move the headquarters to Little Rock'—simply that **'WE AIN'T.'**

"I promised you at the outset that this wouldn't be a traditional address replete with platitudes. I do want to take this occasion, however, to thank Paul Schaefer, Leah Richmond, and the headquarters staff for the consistently reliable and dedicated job they have done this year, and the many preceding years. To Tom Ed Townsend, as chairman of the Council, and the rest of the Executive Committee (Elvin Shuffield and Ross Fowler) as well as the entire Council, I am indebted for your indulgence, your advice, and support. I am appreciative of the various committee chairmen and their committee members. They've worked well. Especially do I want to express appreciation to Dr. Rosenzweig and his committee on arrangements for this—our annual session.

"I would take this brief moment to express the grief and deep sense of loss which we all feel because of the death of the President of the Auxiliary to the AMA, our own beloved Esther Long.

"Mr. Speaker, fellow physicians and guests, again, I thank you."

The House of Delegates gave Dr. Thomas a standing ovation.

Upon the motion of Thomas E. Townsend and Gilbert O. Dean, the House adopted the minutes of the 92nd Annual Session of the Arkansas Medical Society as published in the June, 1968, issue of the Journal of the Arkansas Medical Society.

Upon the motion of Ben Saltzman and George



A scene from "Splash In" by the Mountain Doers. Inaugural Banquet, Tuesday, April 29th.

Wynne, the House adopted the minutes of the special meeting of the House of Delegates on December 15, 1968, as published in the February, 1969, issue of the Journal of the Arkansas Medical Society.

Dr. Chudy requested that the Chairman of the Council make a supplemental report covering minutes of meetings held since publication of the March issue of the Journal. T. E. Townsend, Chairman of the Council, presented the following report:

The Council of the Arkansas Medical Society met on Sunday, February 23rd, and transacted the following business:

1. Took no action on a request for funds for a sign to discourage smoking to be placed outside St. Vincent Infirmary in Little Rock.
2. Directed the chairman to appoint an alternate delegate for Lee Parker as the Society's representative to the Advisory Council for the Regional Medical Programs.
3. Approved the annual budget as submitted by the Budget Committee.
4. Directed that a letter of commendation be written to Francis Henderson and the members of his committee complimenting them on the excellent work on Title XIX legislation.
5. Accepted and approval the annual report of audit.
6. Approved Executive Committee action sanctioning a proposal by the Medical Center for a grant under the Regional Medical Program.
7. Heard the chairman of the Council explain that the employment of a public relations assistant to the Executive Vice President, authorized by the House of Delegates in 1968, was delayed because an adequate source of funds had not been voted. The Executive Committee deemed it unwise to employ a man until a permanent source of revenue to pay his salary and for his activities had been established.
8. Approved the report of the Medical Study Committee to the Department of Correc-



Dr. H. W. Thomas, President of the Arkansas Medical Society, Mrs. Thomas, and Mrs. T. E. Townsend, wife of the Chairman of the Council. Inaugural Banquet, Tuesday, April 29th.

tion, State of Arkansas, as submitted by W. J. Wilkins, Jr. The Council directed that a copy of the report be sent to each member of the Council and that the committee members be complimented for their work.

9. Heard George Mitchell, Medical Director of Blue Cross-Blue Shield, explain that the outgoing secretary of Health, Education and Welfare, Wilbur Cohen, had ordered that expenditures for doctors' fees under Medicare must be reduced and that the range of fees payable by Medicare under the usual and customary system must be reduced to 83% from the present 92% range now being used in Arkansas. Dr. Mitchell advised that Blue Cross-Blue Shield would contest this order vigorously.
10. Voted to increase the budgeted allotment to the Student American Medical Association from $250 to $400 so that the Arkansas Chapter could send representatives to the regional, as well as the national, meetings.
11. Gave its approval to legislation submitted by the State Health Department requesting funds to complete a state-wide emergency communications system.
12. Decided to co-sponsor a series of seminars and lectures to be given by the AMA Council on Foods and Nutrition in schools throughout Arkansas.
13. Referred to the Committee on Constitution and By-Laws a request by the Sub-Committee on Aging that it be made a committee in its own right rather than a sub-committee of the Committee on Public Health.
14. Approved Executive Committee action by which it voted to pay expenses for Speaker Price and Vice Speaker Chudy to attend a meeting in Atlanta.
15. Approved travel expenses for members of the Committee on Medical Education to an AMA meeting in Memphis.
16. Referred to the Society's Insurance Committee a suggestion that the Arkansas Medical Society establish its own malpractice liability insurance company.

The Council met on Sunday, April 13th, and transacted the following business:

1. Heard the Society's attorney warn that physicians would have to start keeping a record of so-called dangerous drugs, including barbiturates and amphetamines.
2. Voted to subsidize the establishment of a "specialty desk" at the Society headquarters. The "specialty desk" will offer administrative services to the various specialty sections under the supervision of the executive staff of the Arkansas Medical Society. Specialties will be billed a nominal amount of from $15 to $25 per month depending on the agreement of the various sections.
3. Heard a report from the chairman of the Committee on Liaison with the Nursing Profession regarding the nurses' wishes for clarification of the "gray areas" in nursing. Council referred the committee chairman to the State Medical Board for further assistance.
4. Voted to ask the Constitutional Revision Committee to change the name of the Postgraduate Education Committee to "Continuing Education Committee" and to change its membership to include a member from each councilor district.
5. Heard a report from the chairman of the Insurance Committee, Tom Honeycutt, recommending that the Medical Society not establish its own malpractice liability insurance and that the members of the Society give more support to St. Paul Mutual Insurance Company, the present



Another scene from "Splash In". Inaugural Banquet, Tuesday, April 29th.

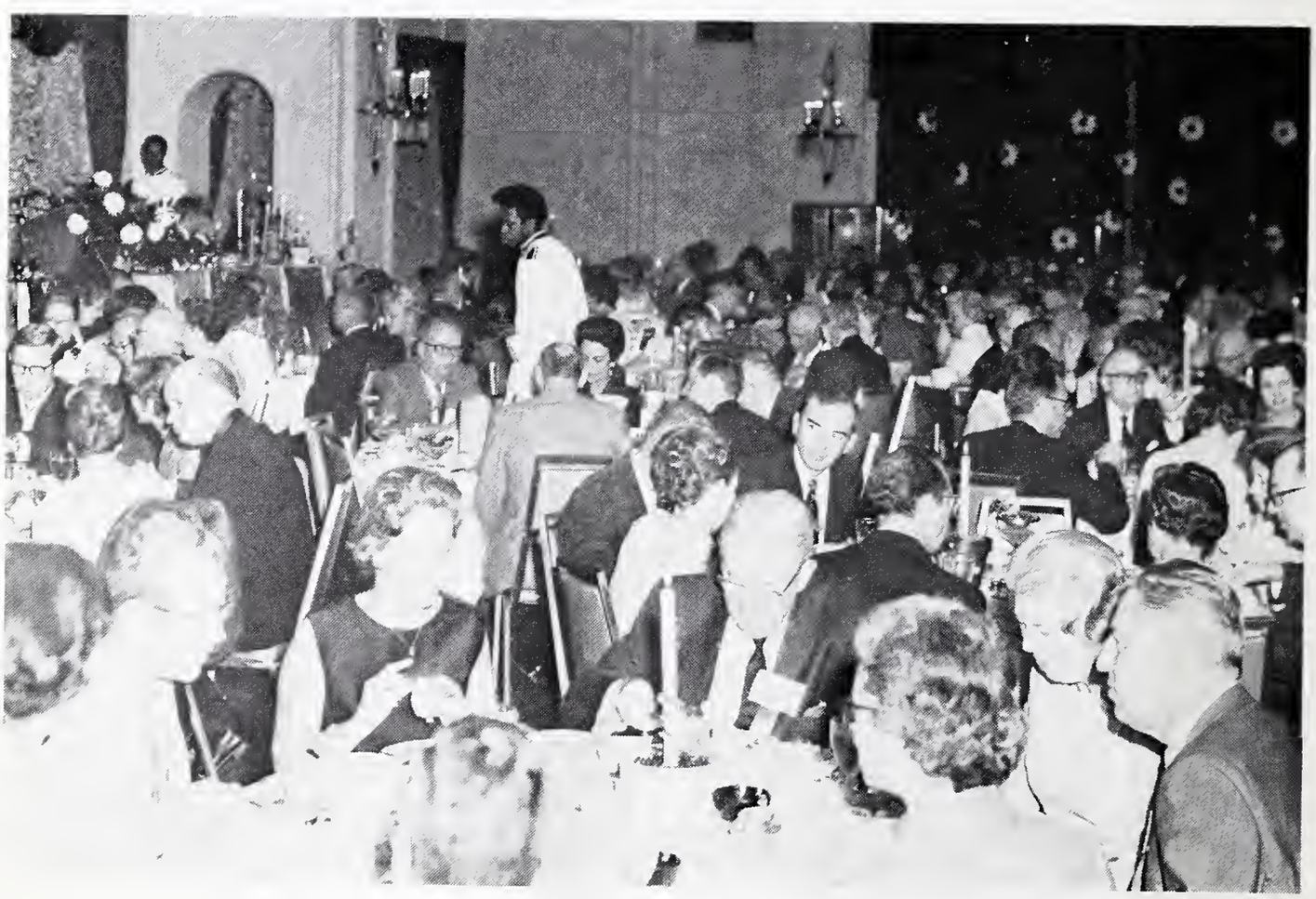
carrier of malpractice liability insurance.

6. Voted to send a representative to the National Conference on Physicians and Schools in October.
7. Nominated H. W. Thomas to serve on Blue Cross-Blue Shield Board of Trustees for a term beginning March, 1970.
8. Referred to the Resolutions Committee a resolution from the Clark County Medical Society criticizing various aspects of the Medicare program.
9. Approved a Miller County resolution criticizing the AMA decision to allow lay laboratories to advertise in the Journal of the AMA.
10. Heard Mr. Ed Rensch, Director of Comprehensive Health Planning for Arkansas, review his experience with comprehensive health planning and his hope for the continuing cooperation of the physicians of the State.
11. Heard President-elect Ross Fowler report on the Executive Committee's trip to Paragould to meet with the Greene-Clay County Medical Society.

The above represents the official actions of the Council. It does not, however, include some very important activities carried out for the Council on a continuing basis by the Executive Committee of the Council. As you know, the Executive Committee consists of the president, the president-elect, the constitutional secretary and the chairman of the Council.

For the past several years, the Executive Committee has met with the Welfare Commissioner on the fourth Wednesday of every month. These meetings have resulted in the establishment of an excellent liaison between the officers of the Society and the Welfare Commissioner and his staff. We take our problems about welfare, Title XIX, and any other pertinent things to them. They, in turn, ask our advice on their relations with physicians, on billing practices, on fees, et cetera.

As a result of this cooperation, we were able to establish the concept that physicians should be paid for their care of welfare patients and that they should be paid their usual and customary fees. The Executive Committee was consulted at length on the provision of the Arkansas



Inaugural Banquet on Tuesday, April 29th, was well attended.

Medicaid (Title XIX) program. As a result, we believe that Arkansas will have a program that will meet the minimum Federal requirements and will, therefore, be the least possible burden to the taxpayers and will infringe on the private practice of medicine by the least allowable amount.

Each month after our meetings with the Welfare Department, we meet as a sub-committee of the 21-Man Committee with the Medical Director of Blue Cross-Blue Shield, George Mitchell, to try to help him adjudicate his more difficult claims.

These two meetings take all afternoon every fourth Wednesday.

The Executive Committee has also been traveling to county society meetings to explain the need for a united medical profession—to justify our participation in the various government programs—and on occasion to be ready to discuss a member's abuse of one of the programs by over-utilization or overcharging.

These trips are made not because the Council or the Executive Committee favor the government programs. They are made to prolong as long as possible what freedoms are left to us. We do not always have a choice between a good and a bad solution. Sometimes we have a choice between two or three bad alternates. We try to make decisions which we think will be in the best interest of the patient and the medical profession. To be most effective in our negotiations, we need your support. We ask that you continue to give us your backing and try to help some of our colleagues understand what we are doing.

* * *

Dr. Townsend presented the following resolution which had been approved by the Council at its meeting earlier that day:

Mrs. C. C. Long, affectionately known as Esther to the members of the Arkansas Medical Society and all who knew her, served her community, her State, her nation and all mankind.

Mrs. Long's leadership and boundless energy were equaled only by her enthusiasm.

She was recognized as an exemplary mother and a leader in the town of Ozark where she lived.

Mrs. Long's achievements in the State and American Medical Association Auxiliary raised standards in auxiliary work to which Arkansas and the nation will rally with pride for years to come.

As she honored Arkansas by her work in behalf of American medicine, we now honor her. We express to her family, her community and the Nation our boundless sorrow at her untimely passing.

WHEREAS, nothing we can say here will truly express our sense of loss, let it be hereby resolved that the House of Delegates of the Arkansas Medical Society in convention assembled on this the 27th day of April, 1969, rise in silent tribute to Mrs. Long.

The Report of the Council was referred by the Vice Speaker to Reference Committee Number Three for consideration.

Upon the motion of Joe Verser and Carl Williams, the House of Delegates voted an expression of thanks and appreciation to the members of the Executive Committee, the Executive Vice President, and C. C. Long for their work on behalf of the Society during the past year. It was pointed out that the Society owes a debt of gratitude to these men for giving up an afternoon each month to work with the Welfare Commissioner and Blue Cross-Blue Shield.

The Vice Speaker then called for reports from committees. Elvin Shuffield, chairman of the Committee on Medical Legislation, presented the following report:



The Chairman of the Golf Committee, Dr. W. G. Klugh, Jr., presents a prize to one of the winners, Dr. Louis R. McFarland of Hot Springs. Dr. McFarland's costume for the "Splash In" is appreciated by President-elect Fowler.

REPORT OF COMMITTEE ON MEDICAL LEGISLATION

Mr. Speaker, Officers, Delegates, and Ladies and Gentlemen:

Your Legislative Committee has had an extremely successful program so far with the current Legislative bodies, but as you know, they have not adjourned and some actions could be taken that would involve the membership of this Society.

First, I want to thank all of you who served in the doctor's room. We are very grateful to you for taking time out from your busy schedules to serve in this capacity and I do not believe the membership of this Society realizes the good will that is achieved by you men that have served. Also, we must pay special tribute to Dr. Morriss Henry who serves in the House of Representatives. Dr. Henry has served our state and our profession very nobly and we are very fortunate to have him as a member of this honorable body. This is an extremely time consuming and expensive position to hold. It costs dearly to be elected to one of these positions and even with fringe benefits, the membership of our two Legislative bodies lose money while serving our state.

Our Legislative Attorney, Mr. Eugene Warren, has served us very faithfully and has done exceptionally good work in handling our affairs during the session. We have had extremely hectic days and we have been misquoted more this year than any year that I can recall, but fortunately, we have achieved good results.

Please take time out when you get home to thank your Senators and Representatives for the kindness they have demonstrated towards our profession. Every piece of Legislation that we proposed was passed with very little difficulty and also, Governor Rockefeller was very nice in signing almost all of our Legislation. There were one or two acts that he stated that he was not personally familiar enough with the action of those acts to pass personal judgment on, so he let them become law without his signature.

Gentlemen, these Legislators served our State and I genuinely believe that each man is trying to do what he thought best. Unfortunately, the



The Executive Committee of the Arkansas Medical Society for 1969-1970. From left to right: Dr. Elvin Shuffield, Little Rock, Secretary; Dr. John P. Wood, Mena, Chairman of the Council; Dr. Jack W. Kennedy, Arkadelphia, President-elect; Dr. Ross Fowler, Harrison, President.

Press did not give these men correct reporting. It is my personal opinion that the individuals that do the reporting from the scene of action are victims of Editors in the downtown offices who do not know what is going on at Capitol Hill and unfortunately both sides of every problem were not presented in print. On some occasions, very incorrect information was released and as far as I know, it was never corrected.

As you know, one chiropractor sat on the public health committee and, as a member of the House, he attempted to have Legislation passed permitting the Welfare Commissioner to pay them for Medicaid fees subject to Federal regulations. Now, this brings a very important item to this House. Congress requested an investigation of the practice of chiropractic and they received a rather large voluminous report. Copies of this report are available to you if you should need them. Also, there is a very thorough, eleven-page summary of this report that is available to you from Mr. Paul Schaefer.

We need to do everything we possibly can to get this report before the public. I would like for our Speakers Bureau to take this information and send it to every man who has volunteered to make public speeches and we need to try to get this information before every civic club in the State of Arkansas. You have known for years what inferior cultist type of medicine these people have been giving the innocent, unknowing individuals of our state. A lot of our people believe just because these men have a license that they are well trained, thoroughly competent men. You know these men are not and this report certainly bore down heavily on the inferior quality of their schools, physical plants, faculty and students. We certainly need a friend in Congress to take this report and air it thoroughly and then revoke some of the privileges that they have granted these chiropractic practitioners. They have gained by Legislative methods what they have failed to accomplish by educational processes.

It appears to me that the osteopaths are going to be permitted to liberalize their type of practice within the next few years. Unfortunately the House of Delegates and AMA has not stood fast and has let a few men, for selfish purposes, gradually weaken our forces to where states can accept these men on local levels. If you will recall, just about two weeks ago, Missouri State Medical Association has started accepting osteopaths under certain conditions into their society. The Legislative Council of the Arkansas Legislature will make a survey and study of osteopathic practice as practiced in other states and we have been invited to sit in and participate in these hearings, but the outlook is not good.

I would like to see our delegates instructed to go to the next House of Delegates of AMA and strongly advocate that these individuals not be taken into any Medical Society until they are graduates from a Class A Medical School. As you will recall, in California, they attempted to make M.D.'s out of these men by permitting them to attend a very short postgraduate course and more than half of the osteopaths objected to this procedure and have been very critical of AMA and doctors for attempting to engulf them. In fact, there have been several lawsuits following this action. Frankly, I do not think these people know what they want, but until they change their schools into Class A Medical Schools, I still think they should not have the rights that we enjoy.

The following acts should be of some interest to you, either from a general professional standpoint or on an individual basis:

ACT 4, an anatomical gift act.

ACT 8, repeals the old blood labeling act where you had to identify the transfusion as being from a white or colored donor.

ACT 13, a motor vehicle inspection act as part of the Highway Safety Act.



Dr. Charles Logan, Chairman of the Scientific Exhibits Committee, presents a $100 check to Dr. Dale Alford whose exhibit was named second place winner.

ACT 17 is a criminal law, making it legal to conduct tests for drunken driving.

ACT 34 pertains to the selling of drugs, intoxicants, glue and similar chemicals to minors.

ACT 61 is the abortion law.

ACT 87 gives immunity to our utilization committees in various committees of medical society and hospital staff pertaining to medical information on patients.

ACT 100 permits treatment of minors for venereal disease without notifying parents or guardian.

ACT 106 is another criminal law pertaining to drunken driving and chemical tests.

ACT 168 provides for an inhalation therapy board.

ACT 173 prevents the shipment of dangerous drugs into Arkansas without registration.

ACT 197 provides for a hearing aid dispensers board.

ACT 198 is another bill for immunity for our utilization committees and other committees as mentioned in ACT 87.

Gentlemen, let me interrupt, actually there were four of these bills passed. Mr. Warren, at the instructions of our House of Delegates, drafted a bill that was very brief and to the point and seemed to cover everything very nicely, as he is capable of doing, but for some reason, hospital administrators, cancer commission and other individuals did not think that the brief law covered everything, so after Mr. Warren's bill was passed, then what I termed a middle-sized bill was passed and then a lengthy bill was passed and then a cancer commission bill was passed, so we ought to be well protected.

ACT 225 is a law that provides that the seller or prescriber of eye glasses shall furnish a card, sticker or tag indicating to purchaser either that the lens are or are not impact resistant. This also set the standards for minimal requirements for an impact lens.

ACT 305 creates a comprehensive health planning agency.

Gentlemen, as of April 25, these were all of the Acts that had been signed. There are numerous bills hanging on the calendar of both of the bodies that could be brought up for voting and consideration when they reconvene May 5. The two bills that had chiropractic



The officers of the Arkansas Medical Society for 1969-70. Front row, left to right: Dr. Elvin Shuffield, Secretary; Dr. Jack W. Kennedy, President-elect; Dr. Ross Fowler, President; Dr. John P. Wood, Chairman of the Council. Standing, left to right: Past Presidents Dr. Joe Verser and Dr. L. A. Whittaker; Councilors Dr. H. V. Kirby, Dr. George F. Wynne, Dr. Paul Gray, Dr. Eldon Fairley, Dr. James C. Bethel, Dr. Bascom P. Raney, Dr. A. S. Koenig, Dr. Karlton Kemp, Dr. Dwight Gray, Dr. L. J. Pat Bell, Dr. W. Payton Kolb, Dr. Hugh R. Edwards; Treasurer Dr. Ben N. Saltzman; Speaker of the House of Delegates Dr. Amail Chudy; Councilor Dr. Kenneth R. Duzan; First Vice President J. P. Price; Councilor Dr. A. W. Lazenby.

amendments on them are still in the House and I have been told that one of these will not be brought up for passage and the other one has no chance of passing.

Gentlemen, in the Senate, there will be 26 seats up for grabs. A number of these men have told me that they will never come back, that they have had all they can take, that they are tired of the adverse publicity and the unjustified criticism that has been heaped upon them. Several of the seats are in the districts where they have a gentlemen's agreement where a man will serve one or two terms from one county and then the other county will furnish a man for one or two terms and they will alternate; throughout the years and on most instances, these agreements have been honored. Also, a recent decision of the Supreme Court may further change these faces of the Senate and the House where it will be one man, one vote on a smaller basis. Regardless of what happens, let me urge you to get out and support the candidate of your choice and do everything you can to get him elected because we need all the help we can get.

Even better, if possible, try to get a doctor to seek a seat in the House or the Senate. If he can be elected to the Senate, it is that much better and I would like for you men of Washington County to analyze your situation closely and if Senator Wade does not seek re-election, then urge Dr. Morriss Henry to seek this position.

The report was received for the information of the House. Morriss Henry was introduced to the House and was given a round of applause.

The Vice Speaker called on the acting chairman of the Constitutional Revisions Committee, Harry Hayes, who presented the following proposed amendment for final vote by the House:

"Amend Chapter 1, Section 4, paragraph 1-a; delete paragraph 1-a and substitute: An active member who shall have attained his seventieth year, and has been an active member of the Arkansas Medical Society for a minimum of ten years, and upon the recommendation of his county medical society, shall be granted the status of life member. Such a member shall enjoy full membership privileges and shall be exempt from the payment of further dues and assessments."

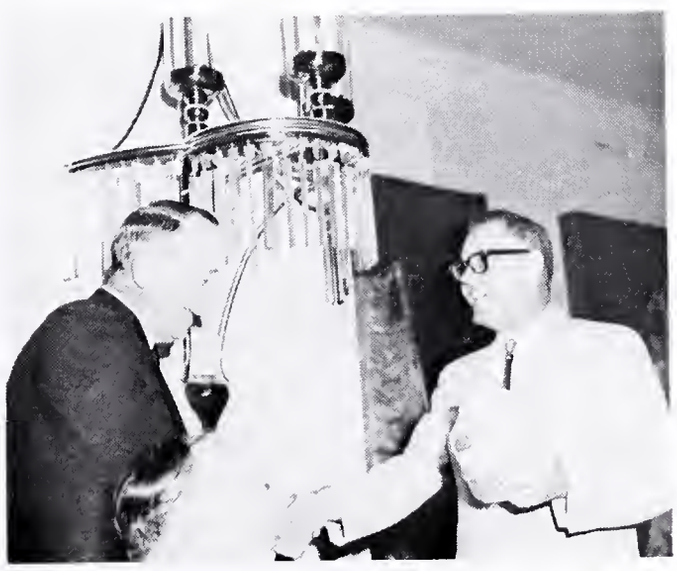
Dr. Hayes moved adoption of the amendment, seconded by James Kolb. Following discussion, the amendment was defeated by a vote of the House—eighteen for the amendment and forty-eight against the amendment.

Dr. Hayes presented the following proposed amendments to the Constitution and By-Laws:

I. Amend By-Laws, Chapter VIII, Committees, Section 1 (A), by adding as standing committees:
   12. Committee on Aging
   13. Committee on Mental Health
   14. Committee on Continuing Education

II. Amend By-Laws, Chapter VIII, Committees, by:
   1. Deleting the words "and postgraduate work" from parentheses following listing of Committee 4 under Section 1 (A) so that it will read:
      4. Committee on Medical Education (Medical School)
   2. Deleting the words "study of the aging population through a sub-committee on aging" from Section 5.
   3. Deleting the words "and postgraduate instruction" from the first sentence of Section 6.

III. Amend By-Laws, Chapter VIII, Committees, by:
   1. Adding Section 13. Committee on Aging
      The Committee on Aging shall study the problems of the aged and the aging. It shall provide leadership and initiative in meeting the health and medical care requirements of older persons. It shall



Dr. Fred Inman of Carlisle receives the booby prize for the Golf Tournament from the Tournament Chairman, Dr. W. G. Klugh, Jr., of Hot Springs.

foster the development of effective methods of achieving the best possible social and spiritual atmosphere for the elderly.

2. Adding Section 14. Committee on Mental Health

   The Committee on Mental Health shall study the problems of the mentally ill. It shall foster development of programs to improve the care and treatment of mental patients and mental retardates.

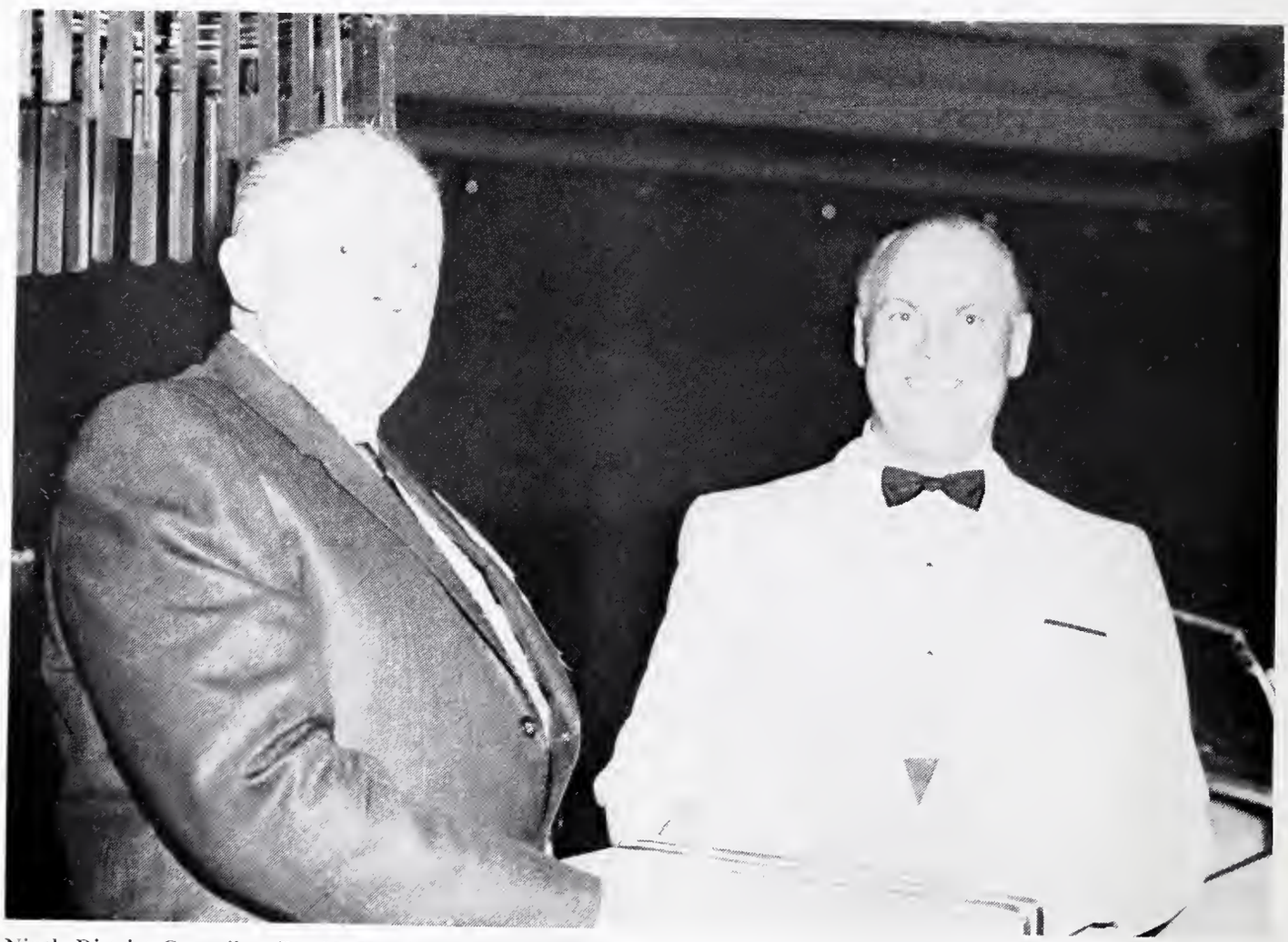
3. Adding Section 15. Committee on Continuing Education

   The Committee on Continuing Education shall consist of ten members, one from each councilor district. The Committee shall exercise leadership and responsibility in continuing review of the system of graduate medical education. It shall foster continuous efforts to increase excellence in the system of graduate education to serve the cause of medicine and to assure the public of continuing improvement in the graduate training of physicians in practice.

IV. Amend the By-Laws, Chapter XI, to delete the words "Robert's Rules of Order" and substitute "Sturgis Rules of Parliamentary Procedure."

The proposed amendments were referred to Reference Committee No. 1.

Vice Speaker Chudy then announced that the chair would consider new business. A delegate from Pulaski County Medical Society requested the floor to present a resolution regarding the specialty of Allergy. It was pointed out a two-thirds majority of attending delegates must approve such introduction. Vice Speaker Price asked for objection to the introduction of the resolution; there being none, the Vice Speaker ruled that this constituted approval by two-thirds majority and that Dr. Stuckey could proceed. Dr. Stuckey read the following resolution:



Ninth District Councilor, Dr. H. V. Kirby, presents gift to the new Society President, Dr. Ross Fowler of Harrison. The members of the Boone County Medical Society, faculty and employees of Boone County Hospital, presented a silver platter to Dr. Fowler.

RESOLUTION
RE: AMERICAN BOARD OF ALLERGY

WHEREAS, it is recognized that the practice of allergy is a primary field of medical practice, and

WHEREAS, the establishing of a primary American Board of Allergy will be in the best interest of the public health and welfare, and

WHEREAS, such a primary Board would set standards regarding the training of allergists and practice of allergy, and

WHEREAS, the practicing allergists of the State of Arkansas all favor the establishing of a primary American Board of Allergy;

THEREFORE, BE IT RESOLVED, that the delegates of the Arkansas Medical Society to the American Medical Association be requested to support resolutions favoring the establishment of a primary American Board of Allergy.

Dr. Chudy referred the resolution to Reference Committee No. 1.

The Vice Speaker then announced meetings of the reference committees and urged members to attend and to participate in discussions concerning the various reports and resolutions.

Dr. Chudy also announced that a meeting of all members of the Society in the Second Congressional District would be held immediately following adjournment of the House to select a nominee for that district position on the State Medical Board.

The Vice Speaker then announced that the selection of the nominating committee for election of officers for the ensuing year would be made. Delegates from the various councilor districts held meetings on the floor and selected the nominating committee as follows: First District, Charles Swingle; Second District, Hugh Edwards; Third District, Dwight Gray; Fourth District, T. E. Townsend; Fifth District, James Guthrie; Sixth District, Lynn Harris; Seventh District, Eli Gary; Eighth District, F. R. Buchanan; Ninth District, Rhys Williams; Tenth District, L. A. Whittaker.

The first meeting of the House of Delegates adjourned at 3:45 P.M.

SCIENTIFIC SESSIONS

The First Vice President of the Society, J. Harry Hayes, Jr., of Little Rock, presided at the scientific session on Monday morning. The program opened with a showing of the film "Hospital Sepsis—A Communicable Disease." The program of lectures was as follows: "Facts and Fancies Regarding Anomalies of Male Genitalia," Ormond Culp, Head of the Section of Urology, Mayo Clinic, Rochester, Minnesota; "Radiation Therapy and Ovarian Carcinoma," W. L. Rockwell, Associate Professor, Department of Obstetrics and Gynecology, University of Kansas Medical Center, Kansas City, Kansas; "Arterial Reconstruction Below the Knee," John L. Ochsner, Department of General Surgery, Ochsner Clinic, New Orleans, Louisiana; "The Vitreous Hemorrhage Problem," Robert J. Brockhurst, Retina Associates, Boston, Massachusetts; "The Care of the Painful Hand," Gordon B. McFarland, Jr., Director of the Mary S. Sherman Laboratory of Bone and Joint Pathology, Alton Ochsner Medical Foundation, New Orleans, Louisiana.

Charles F. Wilkins, Jr., of Russellville, Second Vice President of the Society, presided at the scientific session on Monday afternoon. John L. Ochsner of Ochsner Clinic spoke on "Surgical Treatment of Complications of Coronary Arter Disease"; "The Patient With Sinus Trouble" was discussed by W. Leonard Draper of Houston, Texas; "The Emergency Management of Massive Trauma" was presented by Gordon B. McFarland, Jr., of Ochsner Clinic; "Usefulness of Endometrial Curetting in Abnormal Bleeding" was discussed by Joseph Song, Chief Pathologist and Director of Laboratories, Mercy Hospital, Des Moines, Iowa, and Ormond Culp of Mayo Clinic spoke on "Misconceptions Concerning the Prostate."

A showing of a film entitled "Reconditioning of Coronary Prone and Coronary Stricken Sub-



Tiny Tim or Dr. Deno Pappas (?). "Splash In" skit at Banquet, Tuesday, April 29th.

jects" opened the scientific program on Tuesday morning. The Third Vice President of the Society, Guy U. Robinson of Dumas, presided. A Symposium on Viral Disease was presented by the National Communicable Disease Center and its Seminar Services Unit. "Advances and Horizons in the Study of Viral Disease" was discussed by Maurice A. Mufson, Assistant Professor of Medicine, University of Illinois College of Medicine, Chicago. "CNS Viral Disease—Diagnosis and Management" was presented by Bernard N. Fields, Associate in Medicine and Cell Biology at Albert Einstein College of Medicine, Bronx, New York; Philip A. Brunell, Assistant Professor of Pediatrics, New York University School of Medicine, New York, New York, spoke on "The Use and Abuse of Gamma Globulin in Hepatitis, Measles, Rubella, and Mumps."

RELATED MEETINGS

The Arkansas State Advisory Committee to the Selective Service System held a luncheon meeting on Monday in the Arlington Hotel with its chairman, Gerald H. Teasley of Texarkana, presiding.

The Association of Tumor Clinic Staff Members in Arkansas met on Monday in the Arlington Hotel with Paul L. Mahoney, Jr., of Harrison, Arkansas, Association Chairman, presiding. Joseph Song of Des Moines was guest speaker.

The Orthopedic Section held a luncheon meeting on Tuesday in the Rehabilitation Center. Gordon B. McFarland, Jr., of New Orleans, was guest speaker.

The Arkansas Radiological Society held a luncheon meeting on Tuesday in the Arlington Hotel. A business session was followed by scientific lectures.

The Urology Section met on Tuesday in the Arlington Hotel with Ormond Culp of the Mayo Clinic as guest speaker.

A roundtable luncheon for discussion of surgical topics was held on Tuesday in the Arlington. Members of the faculty of the Department of Surgery, University of Arkansas School of Medicine, served as discussion leaders.

The Eye, Ear, Nose and Throat Section held an all-day meeting in the Arlington Hotel on Tuesday. Speakers included W. Leonard Draper of Houston, J. Forrest Henry of Little Rock, Robert J. Brockhurst of Boston.

The Arkansas Academy of General Practice sponsored a Symposium on Viral Disease on Tuesday afternoon in the Arlington Hotel. Paul A. Wallick, Chairman of the Education Committee of AAGP, presided. The program was presented by the National Communicable Dis-



Members of the Garland County Medical Society and Auxiliary presenting a skit "Splash In". Inaugural Banquet, Tuesday, April 29th.

case Center and the NCDC Seminar Services Unit.

The Arkansas Chapter of the American Academy of Pediatrics held a luncheon and business meeting on Tuesday in the Arlington Hotel.

The Pathologists held a luncheon meeting on Tuesday in the Arlington Hotel.

The Arkansas Society of Obstetricians and Gynecologists held an afternoon meeting on Tuesday in the Arlington Hotel. W. W. Workman of Blytheville served as moderator of a panel made up of Rodney F. Carlton, W. E. Jacques, A. T. Gillespie, and Howard Quittner. A business meeting followed.

The Anesthesiology Section held a meeting on Tuesday afternoon in the Arlington Hotel. Cecil W. Shafer of Louisville, Kentucky, was guest speaker.

OTHER ACTIVITIES

The Society hosted a breakfast for members of the Fifty Year Club on Tuesday, April 29th, in Cafe 2 of the Arlington Hotel. The following members of the Club were present: R. H. Whitehead, president; J. H. McCurry, secretary; E. M. Gray, G. Allen Robinson, F. J. Scully, O. A. Smith, Mac McClendon, W. H. Moreland, Frank Gavlas, Ed D. McKnight, G. C. Coffey, W. K. Smith, E. A. Purdum, F. Walter Carruthers, W. A. Lamb, W. L. Wozencraft, A. D. Cathey, H. King Wade, Sr., D. W. Goldstein, C. W. Hall and guest Winston K. Shorey, Dean of the Medical School.

The Past Presidents of the Arkansas Medical Society were guests of the Society for a breakfast on Wednesday, April 30th. Present were: C. Lewis Hyatt, W. R. Brooksher, Joe Verser, H. W. Thomas, L. A. Whittaker, James M. Kolb, Euclid M. Smith, W. A. Snodgrass, and C. R. Ellis.

The annual golf tournament was played at the Hot Springs Country Club. The winners of the tournament were announced at the banquet by W. G. Klugh, Jr., tournament chairman. Louis McFarland of Hot Springs, W. L. Wineland of Pine Bluff, and Harold D. Langston of Little Rock were the top winners.

PRESIDENT'S INAUGURAL BANQUET

The President's Banquet was held on Tuesday evening, April 29th, in the Ballroom of the Arlington Hotel with the Society president, H. W. Thomas, presiding.

Invocation was by C. Lewis Hyatt of Monticello.

President Thomas introduced those seated at the head table as follows: Joseph L. Rosenzweig, Hot Springs, Chairman of the Convention Committee, and Mrs. Rosenzweig; T. E. Townsend of Pine Bluff, Chairman of the Council of the Arkansas Medical Society, and Mrs. Townsend; Mrs. H. W. Thomas; Ross Fowler, Harrison, President-elect of the Society, and Mrs. Fowler; and Elvin Shuffield of Little Rock, Secretary and Chairman of the Legislative Committee, and Mrs. Shuffield.

Other special guests introduced by President Thomas were: Mrs. Carl Parkerson, Hot Springs, President of the Woman's Auxiliary to the Arkansas Medical Society; Mrs. C. D. Burroughs of Pine Bluff, Immediate Past President of the Woman's Auxiliary to the Arkansas Medical Society; Mrs. Louise Carroll of El Dorado, President of the Arkansas State Medical Assistants Society; Mr. Donald C. Thompson, President of the Arkansas Chapter of the Student American Medical Association.

President Thomas introduced Mrs. Louis K. Hundley of Little Rock and expressed appreciation for her work on decorations for the banquet.

President Thomas also introduced Kenneth New of Dermott, his associate since the summer of 1968, who had made it possible for



Dr. Joseph L. Rosenzweig, Chairman of the Convention Committee, announces the "Splash In" skit. Banquet, Tuesday evening, April 29th.

him to represent the Society at various meetings during the year.

Charles W. Logan of Little Rock, chairman of the Scientific Exhibits Committee, announced the winners of the first, second and third prizes for outstanding exhibits. The prize money was made available by Ayerst Laboratories and Dr. Logan expressed appreciation to them for their contribution. Carl Williams of Fort Smith was first-place winner for his exhibit on "Angiography in Trauma"; the exhibit on "Strabismus Unlimited" by Dale Alford was named second-place winner; and Ellery C. Gay, Jr.'s, exhibit on "Rhinoplasty" was awarded third prize.

W. G. Klugh, Jr., of Hot Springs, announced that the following were winners in the golf tournament: Louis McFarland of Hot Springs, W. L. Wineland of Pine Bluff, Harold D. Langston of Little Rock, Guy Farris of Little Rock, John Satterfield of Little Rock, and Fred Inman of Carlisle.

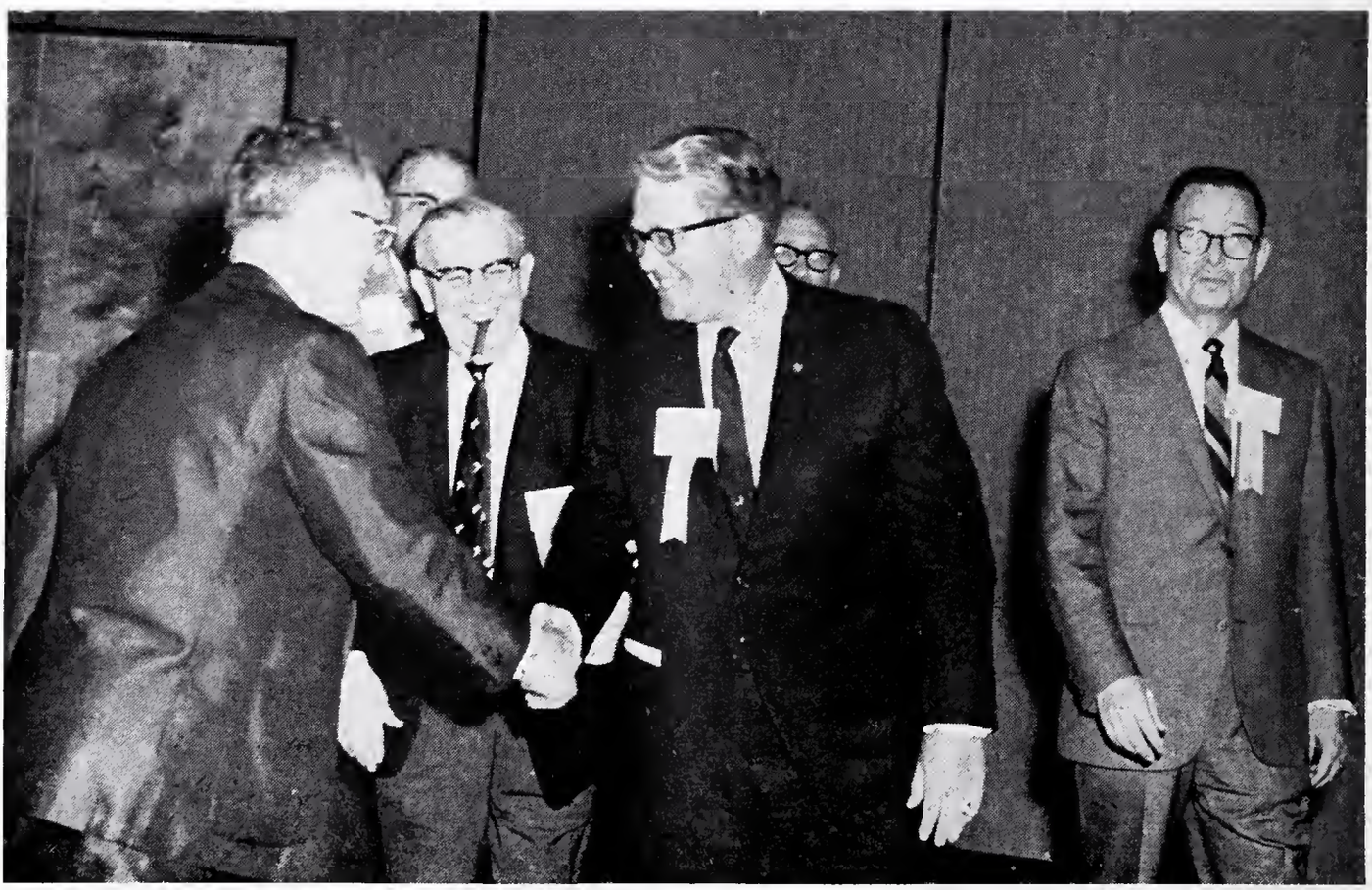
On behalf of the American Medical Association Education and Research Foundation, President Thomas presented a check for $6,000.15 to Winston K. Shorey, Dean of the University of Arkansas School of Medicine, for use of the School.

Martin Eisele of Hot Springs, representing the Board of Directors of the Medical Education Foundation for Arkansas, presented to Dean Shorey a check for $6,500.00 for the Medical School's student loan fund.

Robert Watson, president of the Medical Education Foundation for Arkansas, introduced Mr. William Dillard of the Gus Blass Foundation. Mr. and Mrs. Dillard made a contribution of $2,500.00 to the Foundation, and Dr. Watson expressed the thanks of MEFFA for his generosity. Dr. Watson also announced that Dale Alford had presented to MEFFA a $100 check representing his award for his outstanding scientific exhibit.

President Thomas called attention to the fact that James M. Kolb, Sr., of Clarksville, had been one of the most faithful contributors to MEFFA over the years and asked that Dr. Kolb stand.

President Thomas read the names of past presidents of the Arkansas Medical Society and asked those present to stand. Those in attendance at the banquet were H. King Wade, Sr., of Hot Springs; Euclid M. Smith of Hot Springs;



The new President-elect, Dr. J. W. Kennedy, is congratulated and escorted to the podium by Drs. C. Lewis Hyatt, L. A. Whittaker, W. R. Brooksher, H. W. Thomas, and Hugh R. Edwards. House of Delegates, Wednesday, April 30th.

W. R. Brooksher, Fort Smith; James M. Kolb, Sr., Clarksville; William A. Snodgrass, Jr., Little Rock; H. King Wade, Jr., Hot Springs; Joe Verser, Harrisburg; C. R. Ellis, Malvern; C. Lewis Hyatt, Monticello; L. A. Whittaker, Fort Smith, and Joseph A. Norton, Little Rock.

At the request of President Thomas, past presidents Joe Verser and William S. Snodgrass escorted the president-elect to the rostrum. Dr. Thomas then administered the oath of office of president of the Arkansas Medical Society to Ross Fowler of Harrison.

On behalf of the Society, Dr. Fowler presented to Dr. Thomas a plaque expressing the appreciation of the Society for his service to the medical profession and to the people of Arkansas.

H. V. Kirby, a member of the Boone County Medical Society and a councilor representing that district, presented a silver platter to the new president, Ross Fowler, from the Boone County Medical Society, the staff and employees of the Boone County Hospital. Dr. Fowler expressed appreciation to Dr. Kirby, the Boone County Society and the people at the Hospital.

Dr. Fowler made the following remarks in accepting the office of president of the Society:

ADDRESS OF THE PRESIDENT

It is with humble pride and grateful heart that I thank all the members of the Society for the honor of serving as the 93rd president of the Arkansas Medical Society.

Before any other remarks, I would like to introduce some special guests of mine. My daughter, Jean Giles, and her husband, Dr. Wilbur Giles, a Captain in the Air Force, Bergstrom Air Force Base, Austin, Texas. My brother, Dr. Marvin Fowler, and his wife, Betty, of West Plains, Missouri. Most of you know my other special guest, my wife, Jacquelyn. I am very happy to have these members of my family with us tonight.

It seems a little ironic after vigorously opposing government medical programs for thirty-three years as a member of the Arkansas Medical Society that I would be president the year Medicaid is to be implemented in Arkansas.

Many changes are taking place with large sums of money being expended on grants, plans and implementation of many health agencies while medical fees are threatened with a freeze or a fixed fee schedule. We need every member of this Society, working as individuals and united, to lead, to guide, and to direct these programs to the benefit of the patient and to see that none of these agencies is used to frighten the public, or undermine the confidence in the medical profession for the purpose of delivering more control over medicine to Washington's regulatory agencies. Our county societies and hospital staffs must remain independent and not become absorbed by federally sponsored and financed programs.

Our theme should be to lead, guide, and direct these programs with independence and strength through unity. I ask each and every one of you for your active support to preserve and protect the entity and integrity of the medical profession.

I feel a prayer you all know very appropriate to me, to you and to this Society: "God grant us the courage to change the things that need changing, the patience to endure the things we cannot change, and the wisdom to know the difference."

Dr. Fowler then introduced Joseph L. Rosenzweig, chairman of the convention committee. Dr. Rosenzweig introduced the "Mountain Doers" who presented "Splash In." The skit was written by Mrs. Joseph L. Rosenzweig and Mrs. Martin Eisele, and was directed by Mrs. Ronald J. Bracken. Those participating



Dr. Thomas E. Burrow and Dr. Carl Parkerson entertain with a song as a part of the "Splash In". Inaugural Banquet, Tuesday, April 29th.

in the skit were: Mrs. D. B. South, III, Mrs. James H. French, Mrs. Rosenzweig, Dr. Thomas E. Burrow, Dr. Carl Parkerson, Dr. John W. Dodson, Dr. Deno Pappas, Dr. H. King Wade, Jr., Mrs. Deno Pappas, Dr. Joe W. Chamberlain, Dr. Rosenzweig, Mrs. Robert L. Hill, Mrs. H. King Wade, Jr., Mrs. M. R. Springer, Jr., and Mrs. Dubose Murray. Pauline Ragland, Medical Record Librarian at Ouachita Hospital, and Louis R. McFarland were the musicians.

MEMORIAL SERVICE

A joint Memorial Service of the Arkansas Medical Society and the Woman's Auxiliary to the Arkansas Medical Society was held on Tuesday, April 29, in the Ballroom of the Arlington Hotel. The president of the Society, Dr. H. W. Thomas, presided. Programs were distributed by Mrs. Art B. Martin, immediate past president of the Woman's Auxiliary.

Invocation was by Dr. Walter H. O'Neal of Little Rock.

Mrs. C. D. Burroughs, president of the Auxiliary, read the following names of deceased members of the Auxiliary:

Mrs. C. C. Long, Ozark, Arkansas
Mrs. Lloyd Barta, Jackson, Mississippi
Mrs. C. S. Holt, Fort Smith
Mrs. F. Homer Jones, Piggott
Mrs. Donald M. Meador, Fort Smith
Mrs. J. J. Monfort, Batesville
Mrs. J. Kenneth Thompson, Fort Smith
Mrs. Charles F. Wells, Morrilton

Dr. Thomas read the following names of deceased members of the Society:

Dr. Willis E. Brown, Little Rock
Dr. Charles T. Chamberlain, Fort Smith
Dr. Jan W. Crow, Jacksonville
Dr. Calvin J. Dillaha, Little Rock
Dr. S. A. Drennen, Stuttgart
Dr. T. S. Hare, Crawfordsville
Dr. James Donald Hayes, Little Rock
Dr. F. L. Irby, El Dorado
Dr. W. W. Jackson, Hot Springs
Dr. A. C. Linton, Hector
Dr. L. G. Martin, Hot Springs
Dr. E. J. Munn, El Dorado
Dr. Grady W. Reagan, Little Rock
Dr. Horace E. Ruff, Magnolia
Dr. J. F. Williams, Texarkana

The Memorial Address was made by Dr. A. C. Bradford of Fort Smith.

MEMORIAL ADDRESS

A. C. Bradford, M.D.

President Thomas, Ladies and Gentlemen: Let us direct our attention to words of the Psalmist when he said:



Special guests at Banquet, Tuesday, April 29th, were (center foreground) Dr. and Mrs. Wilbur Giles (Dr. Fowler's daughter, Jean). (Right foreground) Dr. Fowler's brother and his wife, Dr. and Mrs. Marvin Fowler of West Plains, Missouri.

"I will lift up mine eyes unto the hills, from whence cometh my help. My help cometh from the Lord, which made heaven and earth. He will not suffer thy foot to be moved. He that keepeth thee will not slumber. The Lord is thy keeper; the Lord is thy shade upon thy right hand. The sun shall not smite thee by day, nor the moon by night. The Lord shall preserve thee from all evil: He shall preserve thy soul. The Lord shall preserve thy going out and thy coming in from this time forth, and even for ever more."

Thus ends the reading from the Holy Scriptures.

In his oration in memory of the first Athenians who fell in the Peloponnesian War, Pericles commended the fitness of the Athenian public funeral, but doubted the wisdom of any speech, declaring that where men's deeds have been great they should be honored in deed only, and that the reputation of many should never depend upon the judgment of one, nor their virtue exalted or not, as he spoke well or ill. I can, in some faint measure, comprehend what was passing in the mind of the great Athenian as I stand here today to make a brief memorial address.

In these few moments we pause from our busy pursuits to give honest and humble recognition to certain of our loved ones and friends who have passed from this life. We gather here to honor those who labored with us in days gone by—those who shared our burdens—those who taught us how to face life's problems—who gave sufficiently of themselves and of their love to bless us who remain. In the case of each of those whose names we have heard read today, we will make no attempt to fix their final place in history. However, in the presence of so many tokens of admiration that we have heard, it is not too much to say that this life has ended for some of the great characters in the history of Arkansas Medicine.

What is greatness? We are accustomed to call great those exceptional beings upon whom heaven has bestowed some of its choicest gifts, which astonish and dazzle the world by the splendor of phenomenally developed faculties, even when these faculties are marred by defects and weaknesses.

But this is not, in my estimation, the highest conception of greatness. The poise of a well-balanced mind, the equilibrium of faculties evenly ordered, the luminous insight of a calm judgment, and a love that overlooks human fault are gifts which are rarely found in our fellowman. But, when these high qualties are combined with purity of soul, kindness of heart, generosity of disposition, elevation of purpose, and devotion to duty, this is what seems to me to be the highest conception of greatness, greatness which will be abundantly productive of happiness in the hearts of family and friends.

If we cast our glance back over the past few years, we can see the greatness of the lives of those whom we honor today. The brightness of their lives shall continue to shine before us to guide us to higher accomplishments. The love that they have shown to us shall teach us to love one another. The courage of their convictions shall make us stand strong in the face of adversity. May the greatness of their lives cause us to strive for greatness in our lives.

"They are not gone who pass beyond the clasp of hand—out of the strong embrace. They are but come so close we need not grope with hands, nor look to see, nor try to catch the sound of feet. They have put off their shoes softly to walk by day within our thoughts, to tread at night our dream-led paths of sleep."

"They are not lost who find the sunset gate, the goal of their faithful years. Not lost who reach the summit of their climb, the peak above



One of the participants of the "Splash In" skit. Inaugural Banquet, Tuesday, April 29th.

the cloud and storms—and there find the land of sun and stars and God."

Ladies and gentlemen, in lives in which there was so much to be admired, we each shall cherish the memories of love, understanding, naturalness of character, devotion to duty and simplicity of heart that claims the supreme devotion for each their very own.

We say that they are now no more—no more? Nay, I boldly say that they live—live in the hearts of each of us; they live in the pages of history. And so as the ages revolve, their profile shall stand more marked against the horizon of time. The world is better for the lives that they have lived.

In closing let me read:

"When Earth's last picture is painted
And the tubes are twisted and dried;
When the oldest colors have faded
And the youngest critic has died.
We shall rest—and faith we shall need it—
Lie down for an eon or two,
'Till the Master of all good workmen
Shall set us to work anew.
And only the Master shall praise us
And only the Master shall blame,
And no one shall work for money
And no one shall work for fame;
But each for the joy of working
And each on his separate star
Shall draw the Thing as he sees it,
For the Good of Things as they are."

FINAL MEETING
HOUSE OF DELEGATES

Wednesday, April 30, 1969

Speaker J. P. Price called the final meeting of the House of Delegates to order at 10:00 A.M. on Wednesday, April 30th, in Room "C" of the Arlington Hotel. He called on C. Lewis Hyatt for the invocation.

The Executive Vice President, Mr. Schaefer, called the roll of delegates. The following delegates, officers and members seated as delegates by action of the House were present:

ARKANSAS, R. H. Whitehead; ASHLEY, E. C. Gresham; BOONE, Rhys A. Williams; BRADLEY, George F. Wynne; CRAIGHEAD-



The head table at the Inaugural Banquet, Tuesday, April 29th. Right to left: Dr. Joseph L. Rosenzweig, Convention Chairman; Mrs. Rosenzweig; Dr. T. E. Townsend, Chairman of the Council; Mrs. Townsend; Mrs. H. W. Thomas, and Dr. Thomas, President of the Society.

POINSETT, Charles G. Swingle, Glen E. Keller; CRAWFORD, M. C. Edds; DALLAS, John H. Delamore; DREW, C. Lewis Hyatt; GARLAND, Cecil Parkerson; GREENE-CLAY, Asa A. Crow; HEMPSTEAD, C. Lynn Harris; HOT SPRING, R. V. McCray; INDEPENDENCE, Jim E. Lytle; JEFFERSON, William Joe James; JOHNSON, Guy Shrigley; LEE, Dwight W. Gray; LOGAN, W. Duane Jones; LONOKE, Fred C. Inman, Jr.; MISSISSIPPI, Frank Rhodes; NEVADA, H. Blake Crow; OUACHITA, James Guthrie; POPE-YELL, Roy Millard; PULASKI, James L. Smith, Gilbert O. Dean, Edgar J. Easley, Samuel B. Thompson, William S. Orr, Jr., John Schultz, George Mitchell, John Herron, Bill G. Floyd, G. Thomas Jansen, T. J. Smith, Guy R. Farris, and Winston K. Shorey; SALINE, James C. Bethel; SEBASTIAN, A. C. Bradford, L. A. Whittaker, Carl L. Williams, Annette V. Landrum; SEVIER, Jim C. Citty; UNION, James A. Rud; WASHINGTON, Joe C. Parker, Morriss M. Henry, Carie D. Buckley, Jr.; COUNCILORS, Eldon Fairley, Paul Gray, T. E. Townsend, Kenneth R. Duzan, Jack Kennedy, W. Payton Kolb, Bascom P. Raney, Hugh R. Edwards, L. J. Pat Bell, A. W. Lazenby, George F. Wynne, John P. Wood, H. V. Kirby, A. S. Koenig; President, Ross Fowler; First Vice President, Harry Hays, Jr.; Speaker, J. P. Price; Vice Speaker, Amail Chudy; Secretary, Elvin Shuffield; Treasurer, Ben N. Saltzman; Past Presidents, Joe Verser, W. A. Snodgrass, Jr., C. Lewis Hyatt, James M. Kolb, W. R. Brooksher, C. R. Ellis, L. A. Whittaker, and H. W. Thomas.

The Speaker called for the report of the Credentials Committee. The chairman, James M. Kolb, Sr., reported that there were 45 delegates, 21 officers, and 9 past presidents present, thereby constituting a quorum.

The Chairman of the Nominating Committee, T. E. Townsend, presented the following report of the Nominating Committee.

REPORT OF THE NOMINATING COMMITTEE

The following are nominees for the offices requiring only one nominee:

For First Vice President—
John P. Price, Jr., Monticello

For Second Vice President—
Joseph L. Rosenzweig, Hot Springs

For Third Vice President—
A. C. Bradford, Fort Smith

For Treasurer—
Ben N. Saltzman, Mountain Home

For Secretary—
Elvin Shuffield, Little Rock

For Speaker of the House of Delegates—
Amail Chudy, North Little Rock

For Vice Speaker of the House of Delegates—
Charles F. Wilkins, Jr., Russellville

For Councilors—
First District: Eldon Fairley, Osceola
Second District: Paul Gray, Batesville
Third District: Dwight Gray, Marianna
Fourth District: T. E. Townsend, Pine Bluff
Fifth District: K. R. Duzan, El Dorado
Sixth District: Karlton Kemp, Texarkana
Seventh District: James C. Bethel, Benton
Eighth District: W. Payton Kolb, Little Rock
Ninth District: Stanley Applegate, Springdale
Tenth District: C. C. Long, Ozark

For Delegate to the American Medical Association (term from January 1, 1970, to December 31, 1971)—

Purcell Smith, Little Rock

For Alternate Delegate to the American Medical Association (term from January 1, 1970, to December 31, 1971)—

T. E. Townsend, Pine Bluff

Speaker Price called for nominations from the floor. No nominations were made. Upon motion of George F. Wynne, seconded by Samuel B. Thompson, the proposed slate of officers were elected by acclamation.

The chairman of the Nominating Committee



Members of the Garland County Medical Society and Auxiliary participate in the "Splash In" skit. Inaugural Banquet, Tuesday, April 29th.

then presented the following nominations for the office of President-elect:

Jack W. Kennedy, Arkadelphia

Harry Hayes, Jr., Little Rock

Dr. Hayes requested the floor and made the following remarks:

"Mr. Speaker, members of the House of Delegates and Guests: I am overwhelmed by having my name placed in nomination for this highest office. I would like to make a few comments on some observations made during my relatively brief association with this Society. The office of president of this Society can no longer be considered an honor to be bestowed upon a man for long and faithful service; rather, this office puts upon the recipient probably the greatest opportunity to make a lasting contribution which he will ever receive. To regard it as anything less puts the man or this group out of step with the times. The leadership in our Society, the organization and smoothness of this meeting and the scientific program are as good as any other comparable group. What then is the challenge presented to us? I would like to state this clearly and I am repeating what you have heard many times before. We must get more participation at this meeting by the younger physicians. Is there an easy solution to the problem? That answer is 'no.' I think an incoming president, along with his other responsibilities, could have no loftier ambition than to stimulate this participation by the younger physicians. Is there a solution to the problem? I think there is. The actual mechanics of this are subject to change. But, in general, I would suggest that the members of this group who were graduated from Medical School ten or less years before be contacted to see if they would be willing to work as a group to increase the attendance at our meetings. I am sorry to exclude some of the slightly older fellows but I think this is a job which can only be done by the younger men. Out of this group who responds affirmatively, there should be some organization on a geographical basis and then they should be given the names of all members of this Society who have been out of school ten years or less and who have attended none or perhaps one meeting. These names should then be divided and non-attenders should be contacted per-



The President of the Society, Dr. H. W. Thomas, presides at the Inaugural Banquet, Tuesday evening, April 29th.

sonally and repeatedly before the next meeting. This personal contact would, I feel sure, increase the attendance measurably. I have one other suggestion for you. The Medical School should allow and should encourage the senior medical students to attend part or all of this meeting. A list of the students who register should be sent to the Dean at the end of the meeting. I think the same should also be done for the interns and residents not on duty during the meeting. The doctor registration this year is 453. If these two steps were carried out in an enthusiastic manner, the attendance should reach 600, plus the medical students. I think these are necessary things. The overall goal is not simply increased attendance but increased participation. Yet you cannot have one without the other. Now, back to the business at hand. There are two nominations for this office. This should mean a floor fight. I am not opposed to this. In fact, I favor such a fight. My father raised me never to turn away from a fight, but in spite of that, I am going to turn away from this fight and say I think Dr. Kennedy will meet the challenge of this office in a very effective manner and I request that my name be withdrawn from nomination."

Dr. Hayes moved, seconded by T. E. Townsend, that Dr. Kennedy be elected to the office of President-elect by acclamation. The House so voted.

The Speaker asked W. R. Brooksher, L. A. Whittaker, C. Lewis Hyatt, H. W. Thomas, and Hugh Edwards to escort President-elect Jack W. Kennedy to the rostrum.

Dr. Kennedy made the following remarks in accepted the office of President-elect:

"I feel a little sentimental, if you'll pardon me. We talk about friends and as we get older some of them leave us. As we get a little older, we don't have as many as we would like to have. I am very fortunate to have the Medical Society of the State of Arkansas and all of these fellows, I feel, as my friends. I wish to quote a little bit from Ecclesiastes 'There is a time to be born, a time to die, a time to be sad and a time to be glad, and a time to work and a time to play.' The word I want to use is work. I will be standing ready for help and your suggestions and you may be assured that I will do the very best that I can. Thank you very much."

Speaker Price then called for reports from the Reference Committees. The chairman of Reference Committee No. 1 reported as follows:

REPORT OF REFERENCE COMMITTEE NO. 1

G. Thomas Jansen, *Chairman*

Mr. Speaker and members of the House of Delegates:

Reference Committee No. 1 has given due deliberation to all of the reports and resolutions assigned to it and makes the following report.

The Reference Committee recommends adoption of the following committee reports as written:

Committee on Public Health (Rural Health)
Immunization Sub-Committee
Sub-Committee on Traffic Safety
Sub-Committee on Aging
The Sub-Committee on Postgraduate Education

Upon motion of Dr. Jansen and T. E. Townsend, the House voted to adopt this portion of the Reference Committee report.

The Sub-Committee on Liaison with the State Board of Health. The report as submitted has been reviewed. Purcell Smith, during the course of the discussion of this report, felt that it was probably unnecessary to have a Sub-Committee on Liaison with the State Board of Health in view of the excellent inner-action of the Board of Health with the Council of the State Medical Society. Doctor Herron was present and did not disagree with this suggestion. Mr. Speaker, the Committee, therefore, recommends adoption of the report, and further recommends referral to the Constitutional Revisions Committee for con-



Dr. Martin Eisele representing the Board of Directors of the Medical Education Foundation for Arkansas presents a $6,500 check to the Dean of the Medical School, Dr. Winston K. Shorey, for the school's Student Loan Fund.

sideration of dropping this Sub-Committee from activity.

This portion of the Reference Committee report was approved by the House.

Report from the School of Medicine. The Committee carefully reviewed the report of Dean Shorey and the Committee recommends that every member of the House of Delegates and all members of this organization study it carefully as a point of information.

Mr. Speaker, I move that this report be received for the information of the House of Delegates. So ordered.

The Sub-Committee on Tuberculosis. The Committee reviewed the report of this Sub-Committee and the discussion surrounding this report emphasized the inner-relationship of this Committee activity to the Ad hoc Committee on Tuberculosis of the Comprehensive Health Planning Agency on a state level. The Committee recommends that the content of this report be submitted to the Comprehensive Health Planning Agency and to their Sub-Committee on Tuberculosis. It further recommends that our Sub-Committee should assist and discuss with the agency any further use of the Arkansas Tuberculosis Sanatorium. We further recommend that this report and recommendation be brought to the attention of the Arkansas Medical Society Legislative Committee.

Mr. Speaker, the Committee moves the adoption of the report and recommendation. Upon question by a member of the House, Dr. Jansen clarified the recommendation. He pointed out that the Committee report presents for information only the results of the physician survey made by the Medical Society with regard to the Tuberculosis Sanatorium. It was pointed out by some of those in attendance at the Committee hearing that some decisions had already been made by the Comprehensive Health Planning Agency about the further utilization of the Tuberculosis Sanatorium. It was the recommendation of those people in attendance that our Sub-Committee should approach the Agency with the recommendation that our Sub-Committee discuss any further decisions that are made by them for the utilization of the Sanatorium. This simply underscores and points out the continuing interest of the Sub-Committee to act in areas where action is already being taken.

The House gave its approval to this portion of the Reference Committee Report.

Sub-Committee on Mental Health. Mr.



Past Presidents, Drs. William A. Snodgrass and Joe Verser, escort President-elect, Dr. Ross Fowler, to the podium for the Inaugural Ceremony where the oath will be administered by President Thomas.

Speaker, the Committee wishes to recognize the tremendous effort and organization exerted by the Sub-Committee on Mental Health. The full content of this report is recommended to all members of the Society and the Committee recommends approval of the report as submitted. It was so ordered by the Speaker.

Constitutional Revisions Committee. The Committee carefully reviewed the proposed changes in the Constitution and By-Laws as read at the first meeting of the House of Delegates at this 93rd Convention. In general, these proposed changes elevate the Sub-Committees on Aging, Mental Health and Continuing Education to Standing Committee status and provide for the necessary alterations in the wording of the By-Laws to properly implement these changes.

Mr. Speaker, the Committee recommends approval and adoption of these changes on a first-reading basis. It was so ordered by the Speaker.

Mr. Speaker, Reference Committee No. 1 was presented with two resolutions for its evaluation. The first resolution was read before the opening meeting of the House of Delegates and was concerned with the establishment of a primary *American Board of Allergy*. The Committee recommends that this resolution be approved. It was so ordered.

The second resolution presented was relevant to the *private practice of medicine* and the Oath of Hippocrates. The Committee recommends that no action be taken. It was so ordered.

Mr. Speaker, this concludes the report of your Reference Committee No. 1. The Committee wishes to thank all those who appeared before us for their assistance, advice and counsel.

Mr. Speaker, I move adoption of the Reference Committee report in its entirety. It was so ordered.

The chairman of Reference Committee No. 2 presented the following report:

REPORT OF REFERENCE COMMITTEE NO. 2

Winston K. Shorey, *Chairman*

Reference Committee No. 2 convened at 4:00 P.M. on Sunday, April 27th, immediately following adjournment of the opening session of the House of Delegates. All members appointed to this Reference Committee were present. Seven other members of the Arkansas Medical Society were present, this light attendance possibly reflecting the relatively non-controversial nature of most of the issues assigned to this Committee. Despite the small attendance, a productive discussion occurred as each assigned item was presented to the group. These are reported in the sequence with which they were considered at the meeting.

1. The report of the Sub-Committee on Liaison with Vocational Rehabilitation was prepared by its chairman, Paul G. Henley. It is informational and includes no recommendations requiring specific action by the House of Delegates. On the other hand, it does contain valuable information regarding rehabilitation services available to the people of Arkansas through referral by their physicians. Particular emphasis is placed upon rehabilitation services for the blind because the director of the Blind Program is of the opinion that lack of information regarding available services has resulted in a number of referrable blind people not receiving services that can be provided to them. Your Reference Committee commends this report to the membership of the Society as a document that will be helpful to each physician in the care of certain patients.

Mr. Speaker, I move adoption of this report. So ordered.

2. The report of the Committee on Hospitals was prepared by its chairman, Art B. Martin. It is informational and presents no recommendations requiring specific action by the House of Delegates. Included in this report is a detailed critique regarding the handling of casualties re-



Dr. Carl Williams of Fort Smith is congratulated by Dr. Charles Logan, Chairman of the Scientific Exhibits Committee. Dr. Williams' exhibit on "Angiography in Trauma" was named the outstanding scientific exhibit at the convention. Inaugural Banquet, Tuesday, April 29th.

sulting from a tornado at Jonesboro on May 15, 1968. Your Reference Committee commends this portion of the report to the membership of the Society as valuable information to be utilized in the formation and re-evaluation of disaster plans.

Discussion by those in attendance at the Reference Committee meeting turned to problems occurring in the relationships between physicians and hospitals. These include: (1) the need for inclusion of physicians on the governing boards of hospitals; (2) the future of hospital emergency rooms in relation to the practice of medicine; (3) activities of utilization review committees; (4) cooperative arrangements between hospitals in the same and in neighboring communities; and (5) consideration of the potential for staffing and effective operation in the situation where a community is making plans for construction of a new hospital. Your Reference Committee gained the impression that members of the Arkansas Medical Society feel that these and other issues involving hospitals are appropriate items of business for the Hospital Committee to consider in the future.

Mr. Speaker, I move adoption of this report. So ordered.

3. The report of the Sub-Committee on State Health and Medical Resources for Civil Defense was prepared by its chairman, Edgar J. Easley, and represents a great deal of effort by this Sub-Committee during the past year. It includes nine recommendations, eight of which are concerned with increased involvement of county medical societies, the Arkansas Medical Society, and physicians in general in planning and preparation for disasters. One recommendation, No. 4, calls for the Arkansas Medical Society to encourage and support legislation that would develop coterminus districts in the State for all governmental agencies. Further clarification of this



Dr. Jack W. Kennedy of Arkadelphia accepts the office of President-elect of the Society. House of Delegates meeting, Wednesday, April 30th.

recommendation during the Reference Committee meeting brought out the need for well coordinated districts in disaster planning. Such a district should have a well staffed central service point where complete knowledge of all sources of supplies and services within the district is available. Coordination of activities to meet an emergency occurring within the district could then be handled from the central point.

Discussion by Society members attending this Reference Committee meeting revealed that provision for emergency services within the state is seen as an urgent need. It was pointed out that the State Highway Safety Program has been curtailed because of lack of funds, both state and federal. Inasmuch as accidents occur without regard for jurisdictional boundaries of police departments, fire departments and other potential providers of emergency services, there appears to be a need for the Arkansas Medical Society to lend its aid in study and planning for these services whenever its assistance can be utilized at both local and state levels.

Mr. Speaker, I move the adoption of this report with provision that further study be made regarding recommendation No. 4, and that this study be expanded to include consideration of the needs for emergency services as they apply to accidents of all types in addition to those occurring in a major disaster. So ordered.

4. The report of the Committee on Arrangements for the Annual Session was prepared by its chairman, Joseph L. Rosenzweig. The effectiveness with which this Annual Session has proceeded speaks louder than does any report regarding the efforts of this Committee on behalf of the Arkansas Medical Society.

Mr. Speaker, I move adoption of this report with deep appreciation for the planning and implementation of a most successful Annual Session. The House gave a standing vote of appreciation to the Committee on Arrangements.

5. The report of the Committee on Medicine and Religion was prepared by its chairman, Jerome S. Levy. It is informational and includes no recommendations requiring specific action by this body. This Committee has been very active and continues to develop an increasing number of programs designed to promote interchange between the clergy and physicians. The objective is to provide members of each profession with a clearer understanding of the role of the other and to create an atmosphere in which appropriate reliance upon each other results in the patient receiving more complete and comforting care.

Mr. Speaker, I move adoption of this report. So ordered.

6. The report of the Arkansas State Advisory Committee to the Selective Service System was prepared by its chairman, Gerald H. Teasley. This is a most happy informational report inasmuch as no problems related to the induction of physicians into the miltary services have occurred during the past year.

Mr. Speaker, I move adoption of this report. So ordered.

7. The report of the Committee on Correlation of Government Plans was prepared by its chairman, L. A. Whittaker. This is an informational report presenting highlights of actions of the 90th Congress, anticipated actions of the 91st Congress, and certain activities in State government. No recommendations are made requiring specific action by the House of Delegates.

Mr. Speaker, I move adoption of this report. So ordered.

8. The report of the Second Councilor District Professional Relations Committee was prepared by its chairman, M. C. Hawkins, Jr. This Committee had no professional problems to arbitrate during the past year.

Mr. Speaker, I move adoption of this report. So ordered.

9. The report of the Ninth Councilor District Professional Relations Committee was prepared



The gavel, symbol of the office of the President of the Arkansas Medical Society, passes from Dr. H. W. Thomas of Dermott to Dr. Ross Fowler of Harrison. Inaugural Banquet, Tuesday, April 29th.

by its chairman, Ross Fowler. One item of business came before this Committee during the past year.

Mr. Speaker, I move adoption of this report. So ordered.

10. The report of the Medical Study Committee to the Department of Correction, State of Arkansas, was prepared by its chairman, J. W. Wilkins, Jr. This is an excellent comprehensive report which provides the membership with a summary of the activities of this Committee. This Committee has provided a very significant service to the State of Arkansas through investigation of medical services provided within the prison system, recommendations for improvement in services, and assistance in finding ways to bring about these improvements. The efforts of this Committee are certain to reflect well upon our Society.

Mr. Speaker, I move adoption of this report and further move that the Arkansas Medical Society continue its concern with medical services within the Department of Correction through this Committee. So ordered.

11. The report of the Arkansas State Medical Board was prepared by its secretary, Joe Verser. This is a statistical report presenting the activities and finances of the Board during the calendar year 1968. No recommendations requiring specific actions are included.

Mr. Speaker, I move adoption of this report. So ordered.

12. The Summary of Actions of the American Medical Association House of Delegates was prepared by Purcell Smith, Alternate Delegate. This report is a summary of issues that were considered by the House of Delegates of the American Medical Association at its meeting held at Miami Beach, Florida, on December 4, 1968. Members of the Arkansas Medical Society are urged to read this well written report in order that they may be in a position to react through our own delegate to the AMA to the actions of its House of Delegates.

This report includes no recommendations, and no suggestions for instructions to our AMA delegates were generated in the Reference Committee meeting.



Fifty Year Club members were guests of the Society for a breakfast on Tuesday, April 29th. Those attending the breakfast were: Drs. R. H. Whitehead, DeWitt; W. L. Wozencraft, Fayetteville; E. M. Gray, Mountain Home; W. H. Moreland, Tyronza; Ed D. McKnight, Brinkley; O. A. Smith, Hot Springs; D. W. Goldstein, Fort Smith; J. H. McCurry, St. Louis, Missouri; A. D. Cathey, El Dorado; F. J. Scully, Hot Springs; C. W. Hall, Greenwood; G. Allen Robinson, Harrison; F. Walter Carruthers, Little Rock; E. A. Purdum, Hot Springs; Frank Gavlas, Dardanelle; Mac McLendon, Marianna; G. C. Coffey, Hot Springs; W. K. Smith, Hot Springs; W. A. Lamb, Little Rock; H. King Wade, Sr., Hot Springs.

Mr. Speaker, I move adoption of this report. So ordered.

Let me take this opportunity to thank the other members of this Reference Committee for their assistance. These people are: James D. Rankin, Paul Sizemore and John Trieschmann.

Mr. Speaker, I move adoption of this report in its entirety. So ordered.

The Report of Reference Committee No. 3 was presented by a member of the Committee.

REPORT OF REFERENCE COMMITTEE NO. 3

Presented by George F. Wynne

Mr. Speaker and members of the House of Delegates:

Your Reference Committee gave careful consideration to the items referred to it and makes the following report:

1. *Report of the Public Relations Committee, A. C. Bradford, Chairman.* Dr. Bradford appeared before the Committee to stress the need for a full time Public Relations man for the Arkansas Medical Society at this time. The Public Relations Committee feels that this position should be filled as soon as possible, even if this requires an annual increase in the dues to the Arkansas Medical Society. Your Reference Committee agrees as to the need of a full time Public Relations man in the State Medical Society office, but we make no recommendation as to how the funds for this position be obtained.

Mr. Speaker, I move that the Public Relations Committee report be approved as written. It was so ordered.

2. *Report of the Sub-Committee on Liaison with the Nursing Profession, Frank Padberg, Chairman.* Dr. Padberg appeared before the Committee to give an additional report on the work of his Committee. Modern trends in Nursing Education were discussed. In view of the recommendation of the American Medical Association, there is the possibility of a state-wide meeting later this year with the Arkansas State Medical Society, the Arkansas State Nurses Association and the Arkansas Hospital Administrators participating.

Mr. Speaker, I move that this report be approved. So ordered.

3. *Report of the Committee on Insurance, Thomas D. Honeycutt, Chairman.* Your Reference Committee heard extensive discussion by members of the Society concerning the availability and increased premiums of Professional Liability Insurance. Your Reference Committee would like to emphasize to the membership the availability of the Professional Liability Insurance Program underwritten by St. Paul Insurance Company and urge greater participation.

Mr. Speaker, I move the adoption of this report. So ordered.

4. *Report of the Student AMA Liaison Committee, Alfred Kahn, Jr., Chairman.* The report was accepted as written. A discussion of the activities and philosophy of the Student American Medical Association was held. Your Reference Committee feels that a closer relationship between the Student American Medical Association and the Arkansas Medical Society is desirable.

Mr. Speaker, I move the adoption of this report. So ordered.

5. *Report of the Council, T. E. Townsend, Chairman.* The reports of the Council were accepted as written. In addition, your Reference Committee would like to instruct our delegates to the American Medical Association to support the Miller County resolution criticizing the American Medical Association's decision to allow lay laboratories to advertise in the Journal of the American Medical Association.

Mr. Speaker, I move the adoption of these reports. So ordered.

6. *Report of the Sub-Committee on Liaison with the Woman's Auxiliary, Joseph A. Norton, Chairman.*

Report of the Medical Advisory Committee to the Medical Assistants Society, Millard W. Black, Chairman.

Report of the 21-Man Fee Committee, C. C. Long, Chairman.

Report of the Executive Vice President, Mr. Paul C. Schaefer.

Report of the Budget Committee, W. R. Brooksher, Chairman.

Report of the State Department of Health, John T. Herron, State Health Officer.

The reports of the above Committees were accepted as written.

Mr. Speaker, I move the adoption of these reports. So ordered.

Mr. Speaker, this concludes the report of your Reference Committee No. 3 and I move for the adoption of the entire report.

I wish to thank those who appeared before this Reference Committee, my fellow members on the Committee, and those members of the staff who assisted us.

The Supplemental Report of the Council covering meetings held during the Convention was presented by Chairman T. E. Townsend.

REPORT OF THE COUNCIL

T. E. Townsend, *Chairman*

The Council met on Sunday, April 27th, and transacted the following business:

1. Nominated Ernest Hartmann to represent the Fifth Councilor District on the Arkansas State Arbitration Commission and nominated Coy Kaylor to represent the Ninth Councilor District on the Arbitration Commission.
2. Nominated Joe Rushton to succeed himself on the Board for the Medical Education Foundation for Arkansas.
3. Heard Mr. William Reinertson, representing the Health Insurance Council, discuss problems of mutual interest to the medical profession and the insurance industry. Mr. Reinertson presented a simplified standard insurance form recommended by the insurance industry.
4. Took under advisement a suggestion by President Thomas that the Society investigate establishing a computerized billing system for doctors.
5. Voted to increase the Senior Medical Day budget to include a cocktail party for the seniors.
6. Approved the following list of dues exemptions as submitted by the county medical societies:

For reason of residency training:

Billy J. Jordan	Otis Cutler
A. E. Andrews	Jimmie J. Magie
A. Frank Isele	Rodger P. Lewis
Solon McGaughey	Richard K. Lovell
Charles Northum	Donald I. Purcell
William A. Woodcock	

For reason of disability:

William C. Hayes	Bryce Cummins
P. G. Remine	Hunter C. Sims, Sr.
H. H. Holt	D. W. Sloan
Daniel H. Autry	Wm. K. Hill
S. T. W. Cull	H. E. McEntire

For Military Service:

J. H. Lyford	Alex S. Y. Go
Michael B. Barnett	

For Retirement:

Wm. L. McNamara	James N. Nisbett
Charles R. Walton	N. W. Riegler, Sr.
R. R. Kirkpatrick	Frances C. Rothert
H. K. Carrington	A. M. Washburn
J. H. Downs	Eva F. Dodge
Morgan C. Berry	Charles Wallis
E. J. Chaffin	C. Fletcher Watson
H. Clay Chenault	H. L. Boyer
R. M. Blakely	C. M. Brizzolara
Martha M. Brown	Joseph P. Delaney
Glen M. Holmes	Caldeen D. Gunter
Harold N. Miller	James L. Jackson

For Life Membership:

T. N. Black	M. J. Kilbury, Sr.
Howell W. Brewer	F. Walter Carruthers
G. W. S. Ish, Sr.	J. M. Robinson

7. Received for information a letter from the Hot Spring County Medical Society supporting a resolution by Greene-Clay County Medical Society declaring that they would not participate in insurance programs embodying the usual, customary, and reasonable principles offered by Blue Cross-Blue Shield.

The Council met on Monday and:

1. Received a request for assistance in establishing a medical library in Vietnam. The Council decided to learn what specific things the Arkansas Medical Society could do to assist.
2. Received a recommendation from the Washington County Medical Society that a standard claim form including a section on individual responsibility be referred to the Insurance Committee of the Society for its recommendation.
3. Directed that county medical societies be advised by letter when Council minutes will appear in the Journal of the Arkansas Medical Society.

The Council met on Tuesday and:

1. Voted to authorize the Executive Vice President to change auditors if another certified public accountant could be found who will claim a more moderate fee.
2. Decided to schedule a Council reception for all members of the Medical Society and their wives for the first Sunday evening of the Annual Session for 1970.

The Council met on Wednesday and:

1. Directed that in the future, delegates be advised in advance of the annual meeting of their duties.
2. Requested that the Speaker and Vice Speaker present recommendations for informing delegates and streamlining procedures of House

of Delegates to the Council for its consideration.

Upon the motion of T. E. Townsend and L. J. Pat Bell, the House voted to accept the Report of the Council as amended to delete one name from the list of dues exempt members.

Upon the motion of James M. Kolb and C. R. Ellis, the House voted to send copies of the resolution concerning Esther Long to the family, the OZARK SPECTATOR and to THE AMA NEWS for inclusion in the Woman's Auxiliary section.

Mr. Schaefer called the attention of the House of Delegates to the fact that in 1968 and again in 1969, Arkansas Blue Cross-Blue Shield has furnished the services of their public relations firm in publicizing the convention and in furnishing the convention photographer. Mr. Schaefer expressed thanks to Mr. Frank J. Wills of the Frank J. Wills Company of Little Rock and to the Arkansas Blue Cross-Blue Shield.

Upon the motion of C. R. Ellis and T. E. Townsend, the House voted to reconsider that portion of Reference Committee No. 3's report regarding employment of a public relations man.

Joe Verser moved, seconded by Ben Saltzman, that we take the matter back to the county medical societies for discussion and that it be reconsidered by the House of Delegates at its next meeting. The motion was defeated by a large majority.

After lengthy discussion of the need for an assistant to the Executive Vice President and what the duties of the individual would be, A. S. Koenig moved that the dues be increased by $15 per annum and that the Executive Vice President provide each county medical society with an explanation of what the individual's duties will be and the necessity for the dues increase. Upon second by Kemp, the House voted as follows: 61 for the motion, 6 opposed.

Speaker Price announced that Dr. Hugh R. Edwards of Searcy had been nominated by district election for the Second Congressional Dis-



Past Presidents of the Arkansas Medical Society were guests of the Society at a breakfast, Wednesday, April 30th. Present were (front row, left to right): Dr. C. Lewis Hyatt, Monticello; Dr. W. R. Brooksher, Fort Smith; Dr. Joe Verser, Harrisburg; Dr. H. W. Thomas, Dermott; Dr. L. A. Whitlaker, Fort Smith. Back row: Dr. James M. Kolb, Sr., Clarksville; Dr. Euclid Smith, Hot Springs; Dr. W. A. Snodgrass, Little Rock; Dr. C. R. Ellis, Malvern.

trict position on the Arkansas State Medical Board. Upon the motion of William S. Orr and George F. Wynne, the House approved the nomination.

John W. Treischmann, speaking on behalf of the Garland County Medical Society, invited the Society to hold its 1970 meeting in Hot Springs. The House unanimously accepted the invitation.

Upon the motion of Elvin Shuffield and T. E. Townsend, the House directed that resolutions of appreciation be sent to the Arlington Hotel, the Convention Committee, the Hot Springs Country Club, the Hot Springs Convention Bureau, guest speakers, scientific and technical exhibitors, Ayerst Laboratories, the medical assistants, and the news media.

Upon the motion of Amail Chudy, the House of Delegates gave a standing ovation to its retiring Speaker, J. P. Price.

The meeting of the House of Delegates adjourned at 12:25 P.M.

REORGANIZATIONAL MEETING OF THE COUNCIL

Immediately following adjournment of the House of Delegates, the Council held a brief meeting to reorganize. Dr. John P. Wood was elected chairman of the Council and Dr. Alfred Kahn, Jr., was elected editor of the Journal.

REGISTRATION

Physicians	453
Medical Students	3
Medical Assistants, Nurses	13
Auxiliary	14
Exhibitors	
Technical	128
Scientific	12
Other Guests	11
	634

OFFICERS OF THE ARKANSAS MEDICAL SOCIETY — 1969-1970

President	Ross Fowler, 213 West Stephenson, Harrison 72601
President-elect	Jack W. Kennedy, 1008 Pine, Arkadelphia 71923
First Vice President	John P. Price, Jr., 216 South Main, Monticello 71655
Second Vice President	Joseph L. Rosenzweig, 236 Woodbine, Hot Springs 71901
Third Vice President	A. C. Bradford, 100 South 14th Street, Fort Smith 72901
Secretary	Elvin Shuffield, 1000 Wolfe, Little Rock 72202
Secretary Emeritus	W. R. Brooksher, Box 3096, Station A, Fort Smith 72901
Treasurer	Ben N. Saltzman, 126 West Sixth, Mountain Home 72653
Speaker, House of Delegates	Amail Chudy, 1801 Maple, North Little Rock 72114
Vice Speaker of House	Charles F. Wilkins, Jr., 511 West Main, Russellville 72801
Journal Editor	Alfred Kahn, Jr., 1300 West Sixth, Little Rock 72201
Delegates to AMA (1969)	C. C. Long, 110 West Commercial, Ozark 72949
	Jack W. Kennedy, 1008 Pine, Arkadelphia 71923
(1970)	Purcell Smith, 4001 West Capitol, Little Rock 72205
Alternates (1969)	Joe Verser, P. O. Box 106, Harrisburg 72432
	Purcell Smith, 4001 West Capitol, Little Rock 72205
(1970)	T. E. Townsend, 1310 Cherry, Pine Bluff 71601
Executive Vice President	Mr. Paul C. Schaefer, P. O. Box 1208, Fort Smith 72901

EXECUTIVE COMMITTEE OF THE COUNCIL

Chairman of the Council	John P. Wood, 906 Mena, Mena 71953
President	Ross Fowler, 213 West Stephenson, Harrison 72601
President-elect	Jack W. Kennedy, 1008 Pine, Arkadelphia 71923
Secretary	Elvin Shuffield, 1000 Wolfe, Little Rock 72202

COUNCILORS

District	Councilor Term Expires '69	Councilor Term Expires '70	Counties in District
1.	Eldon Fairley P. O. Box 71 Osceola 72370	Bascom P. Raney 403 E. Matthews Jonesboro 72401	Clay, Craighead, Crittenden, Fulton, Greene, Lawrence, Mississippi, Poinsett, Randolph, and Sharp
2.	Paul Gray P. O. Box 31 Batesville 72501	Hugh R. Edwards 607 Woodruff Searcy 72143	Cleburne, Conway, Faulkner, Independence, Izard, Jackson, Stone, and White
3.	Dwight W. Gray 110 W. Chestnut Marianna 72360	L. J. P. Bell 626 Poplar Helena 72342	Arkansas, Cross, Lee, Lonoke, Monroe, Phillips, Prairie, St. Francis, and Woodruff
4.	T. E. Townsend 1310 Cherry Pine Bluff 71601	Wayne Lazenby 145 W. Waterman Dumas 71639	Ashley, Chicot, Desha, Drew, Jefferson, and Lincoln
5.	Kenneth D. Duzan 443 West Oak El Dorado 71730	George F. Wynne 113 West Cypress Warren 71671	Bradley, Calhoun, Cleveland, Columbia, Dallas, Ouachita, and Union
6.	Karlton H. Kemp 408 Hazel Texarkana 75501	John P. Wood 906 Mena Mena 71953	Hempstead, Howard, Lafayette, Little River, Miller, Nevada, Pike, Polk, and Sevier
7.	James C. Bethel 221 East Sevier Benton 72015	Robert F. McCrary Meyer Building Hot Springs 71901	Clark, Garland, Grant, Hot Spring, Montgomery, and Saline
8.	W. Payton Kolb 1120 Marshall Little Rock 72201	James Morrison St. Vincent Inf. Little Rock 72207	Pulaski
9.	Stanley Applegate Springdale Clinic Springdale 72764	Henry V. Kirby 216 North Walnut Harrison 72601	Baxter, Benton, Boone, Carroll, Madison, Marion, Newton, Searcy, Van Buren, and Washington
10.	C. C. Long 110 W. Commercial Ozark 72949	A. S. Koenig 922 Lexington Fort Smith 72901	Crawford, Franklin, Johnson, Logan, Perry, Pope, Scott, Sebastian, and Yell

1969—COUNTY MEDICAL SOCIETIES—ARKANSAS MEDICAL SOCIETY

ARKANSAS ..... Pres.—Milton C. John, Jr., Rt. 1, Box 21D, Stuttgart 72160
Secy.—John P. Bethell, Jr., Rt. 1, Box 21D, Stuttgart 72160

ASHLEY ..... Pres.—C. E. Ripley, Crossett Health Center, Crossett 71635
Secy.—D. L. Toon, 310 Main Street, Crossett 71635

BAXTER ..... Pres.—John M. Grasse, Jr., Medical Center, Calico Rock 72519
Secy.—Ben N. Saltzman, 126 West 6th, Mountain Home 72653

BENTON ..... Pres.—James L. Pickens, P. O. Drawer 128, Rogers 72756
Secy.—Stewart M. Wilson, P. O. Box 737, Rogers 72756

BOONE ..... Pres.—Thomas E. Bell, 604 North Spring, Harrison 72601
Secy.—William H. Breit, 651 North Spring, Harrison 72601

BRADLEY ..... Pres.—George F. Wynne, 113 West Cypress, Warren 71671
Secy.—W. C. Whaley, 203 East Church, Warren 71671

Chicot	Pres.—John P. Burge, Lake Village Infirmary, Lake Village 71653 Secy.—C. J. Little, Lake Village Infirmary, Lake Village 71653
Clark	Pres.—Joe W. Reid, 618 Caddo, Arkadelphia 71923 Secy.—Robert H. Nunnally, 107 North 3rd, Gurdon 71743
Cleburne	Pres.—Max Baldridge, P. O. Box 431, Heber Springs 72543 Secy.—D. H. McClanahan, 600 West Main, Heber Springs 72543
Columbia	Pres.—Charles L. Weber, 110 West North, Magnolia 71753 Secy.—Charles H. Weber, 110 West North, Magnolia 71753
Conway	Pres.—Clifford L. Evans, 200 South Moose, Morrilton 72110 Secy.—Charles F. Wells, 601 South Moose, Morrilton 72110
Craighead-Poinsett	Pres.—Charles E. Kemp, 809 Cobb, Jonesboro 72401 Secy.—Glen F. Baker, 411 East Matthews, Jonesboro 72401
Crawford	Pres.—Griffith H. Ferrell, Jr., 1103 Chestnut, Van Buren 72956 Secy.—J. N. Thicksten, 164 Fayetteville, Alma 72921
Crittenden	Pres.—David H. Pontius, Jr., 300 South Rhodes, West Memphis 72301 Secy.—Keith B. Kennedy, 316 Tyler, West Memphis 72301
Cross	Pres.—John H. Young, 411 South State, Wynne 72396 Secy.—Vance J. Crain, 303 East Union, Wynne 72396
Dallas	Pres.—Harry H. Atkinson, 300 Cadiz, Fordyce 71742 Secy.—Jack T. Dobson, 110 North Clifton, Fordyce 71742
Desha	Pres.—O. G. Blackwell, 145 West Waterman, Dumas 71639 Secy.—Howard R. Harris, 207 South Elm, Dumas 71639
Drew	Pres.—Paul A. Wallick, 216 South Main, Monticello 71655 Secy.—A. K. Busby, 816 North Hyatt, Monticello 71655
Faulkner	Pres.—Robert B. Benafield, 919 Locust, Conway 72032 Secy.—Bob G. Banister, 1300 North Parkway, Conway 72032
Franklin	Pres.—C. C. Long, 110 West Commercial, Ozark 72949 Secy.—David L. Gibbons, Gibbons Clinic, Ozark 72949
Garland	Pres.—Ralph M. Patterson, 231 Central, Hot Springs 71901 Secy.—Louis R. McFarland, 211 Hobson, Hot Springs 71901
Grant	Pres.—Curtis B. Clark, 200 South Rose, Sheridan 72150 Secy.—Clyde D. Paulk, 200 South Rose, Sheridan 72150
Greene-Clay	Pres.—Bill C. Page, 602 West 2nd, Corning 72422 Secy.—Richard O. Martin, Community Meth. Hosp., Paragould 72454
Hempstead	Pres.—Jim McKenzie, P. O. Box 445, Hope 71801 Secy.—C. Lynn Harris, 820 South Main, Hope 71801
Hot Spring	Pres.—John W. Cole, 725 East Page, Malvern 72104 Secy.—Larry B. Brashears, 1524 Potts, Malvern 72104
Howard-Pike	Pres.—M. H. Wilmoth, 14th and Leslie, Nashville 71852 Secy.—M. H. Wilmoth, 14th and Leslie, Nashville 71852
Independence	Pres.—James M. Stalker, P. O. Box 1506, Batesville 72501 Secy.—Chaney W. Taylor, North Arkansas Clinic, Batesville 72501
Jackson	Pres.—Haymond Harris, 1205 McLain, Newport 72112 Secy.—John D. Ashley, 2nd and Laurel, Newport 72112
Jefferson	Pres.—Walter J. Wilkins, Jr., 1421 Cherry, Pine Blulf 71601 Secy.—John Crenshaw, 1421 Cherry, Pine Bluff 71601

Johnson — Pres.—W. R. Scarborough, 109 North Fulton, Clarksville 72830
Secy.—R. H. Manley, 307 East Main, Clarksville 72830

Lafayette — Pres.—Robert H. Harrison, Lewisville 71829
Secy.—Willie J. Lee, P. O. Box 276, Stamps 71860

Lawrence — Pres.—Ralph Joseph, Highway 25W, Walnut Ridge 72476
Secy.—J. B. Elders, 321 S.W. 3rd, Walnut Ridge 72476

Lee — Pres.—Dwight W. Gray, 110 West Chestnut, Marianna 72360
Secy.—Floyd S. Dozier, 29 North Poplar, Marianna 72360

Lincoln — Pres.—James W. Freeland, P. O. Box 608, Star City 71667
Secy.—Richard C. Petty, P. O. Box 638, Star City 71667

Little River — Pres.—Joseph G. Shelton, P. O. Box 697, Ashdown 71822
Secy.—N. W. Peacock, Jr., P. O. Box 667, Ashdown 71822

Logan — Pres.—Charles McD. Smith, 710 North Express, Paris 72855
Secy.—James T. Smith, 710 North Express, Paris 72855

Lonoke — Pres.—W. R. Harris, England Hospital, England 72046
Secy.—B. E. Holmes, 305 West Front Street, Lonoke 72086

Miller — Pres.—Robert P. Hughes, 401 East 5th, Texarkana 75501
Secy.—R. H. Chappell, P. O. Box 1843, Texarkana 75501
Exec. Secy.—Mrs. Marilyn Pryor, P. O. Box 1843, Texarkana 75501

Mississippi — Pres.—Charles E. Campbell, Jr., 519 North 6th, Blytheville 72315
Secy.—Eldon Fairley, Post Office Box 71, Osceola 72370

Monroe — Pres.—J. P. Williams, Jr., 127 South New Orleans, Brinkley 72021
Secy.—W. L. Walker, 114 South New Orleans, Brinkley 72021

Nevada — Pres.—Charles D. Avery, 427 East 6th, Prescott 71857
Secy.—H. Blake Crow, 327 East 2nd, Prescott 71857

Ouachita — Pres.—A. E. Thorne, Ouachita Hospital, Camden 71701
Secy.—L. V. Ozment, 530 Jefferson, S.W., Camden 71701

Phillips — Pres.—Evan J. Kurts, P. O. Box 2336, West Helena 72390
Secy.—William W. Biggs, Helena Hospital, Helena 72342

Polk — Pres.—David P. Hefner, 518 Jansen, Mena 71953
Secy.—Henry N. Rogers, 600 West 7th, Mena 71953

Pope-Yell — Pres.—David S. Bachman, 511 West Main, Russellville 72801
Secy.—W. E. King, Jr., 511 West Main, Russellville 72801

Pulaski — Pres.—Samuel B. Thompson, 5520 West Markham, Little Rock 72205
Secy.—Purcell Smith, Jr., 4001 West Capitol, Little Rock 72205
Exec. Secy.—Mr. Paul Harris, Univ. Tower Bldg., 12th & Univ., Little Rock 72204

Randolph — Pres.—W. W. Scott, 213 West Broadway, Pocahontas 72455
Secy.—James J. Wyllie, 309 Broadway, Pocahontas 72455

Saline — Pres.—James C. Bethel, 221 East Sevier, Benton 72015
Secy.—James C. Bethel, 221 East Sevier, Benton 72015

Scott — Pres.—Harold B. Wright, P. O. Box 249, Waldron 72958
Secy.—James A. Jenkins, P. O. Box 190, Waldron 72958

Searcy — Pres.—John H. Williams, P. O. Box 177, Marshall 72650
Secy.—John A. Hall, 302 East Main, Clinton 72031

SEBASTIAN	Pres.—James M. Post, 818 Lexington, Fort Smith 72901
	Secy.—T. A. Feild, III, 3600 North "O", Fort Smith 72901
	Asst. Secy.—Mrs. Jackie Boyd, c/o Sparks Hosp., 1311 South "I", Fort Smith 72901
SEVIER	Pres.—Eugene A. Joseph, 421 West Gilson, DeQueen 71832
	Secy.—Rodger C. Dickinson, 302 North 4th, DeQueen 71832
ST. FRANCIS	Pres.—A. M. Bradley, P. O. Box 70, Forrest City 72335
	Secy.—E. Morgan Collins, Jr., P. O. Box 989, Forrest City 72335
UNION	Pres.—J. W. Harper, Harper Clinic, El Dorado 71730
	Secy.—R. M. Lewis, 460 West Oak, El Dorado 71730
WASHINGTON	Pres.—Arthur Moore, 675 Lollar Lane, Fayetteville 72701
	Secy.—Robert H. McCollum, 102 West Dickson, Fayetteville 72701
WHITE	Pres.—Jack R. Gardner, 910 East Race, Searcy 72143
	Secy.—Hugh R. Edwards, 607 Woodruff, Searcy 72143
WOODRUFF	Pres.—James E. Rowe, 306 East 3rd, McCrory 72101
	Secy.—B. E. Hendrixson, 306 East 3rd, McCrory 72101

COMMITTEES 1969 - 1970 Arkansas Medical Society

	Term Expires
COMMITTEE ON CANCER CONTROL	
Frank Kumpuris, 415 North University, Little Rock 72205—*CHAIRMAN*	1970
Charles R. Henry, 500 South University, Little Rock 72205	1970
Robert L. McDonald, 1108½ Poplar, Pine Bluff 71601	1971
Doyne Dodd, Post Office Box 3096, Station A, Fort Smith 72901	1971
Jean Gladden, 651 North Spring, Harrison 72601	1972
Glenn P. Schoettle, 308 South Rhodes, West Memphis 72301	1972
COMMITTEE ON MEDICAL LEGISLATION	
Alan G. Cazort, 4001 West Capitol, Little Rock 72205	1970
W. Payton Kolb, 1120 Marshall, Little Rock 72202	1970
Martin Eisele, 101 Whittington, Hot Springs 71901	1970
Ross Maynard, 303 National Building, Pine Bluff 71601	1971
Friedman Sisco, 101 South Shilo, Springdale 72764	1971
H. A. Crane, Jr., 1107 Cherry, Pine Bluff 71601	1971
Elvin Shuffield, 1000 Wolfe, Little Rock 72202—*CHAIRMAN*	1972
Joe Verser, Post Office Box 106, Harrisburg 72432	1972
William A. Snodgrass, Jr., Donaghey Building, Little Rock 72201	1972
SUB-COMMITTEE ON NATIONAL LEGISLATION	
Omer Bradsher, 901 West Kingshighway, Paragould 72450	1970
H. A. Crane, Jr., 1107 Cherry, Pine Bluff 71601	1970
George F. Wynne, 113 West Cypress, Warren 71671	1971
Dale Alford, 5700 West Markham, Little Rock 72205—*CHAIRMAN*	1971
Kenneth R. Duzan, 443 West Oak, El Dorado 71730	1972
Kemal Kutait, 1120 Lexington, Fort Smith 72901	1972
COMMITTEE ON PUBLIC HEALTH (Rural Health)	
Ben N. Saltzman, 126 West 6th, Mountain Home 72653—*CHAIRMAN*	1970
Edgar J. Easley, State Health Department, Little Rock 72201	1970
John P. Bethell, Jr., Route No. 1, Box 21-D, Stuttgart 72160	1971
Wayne Lazenby, 145 West Waterman, Dumas 71639	1971
C. A. Archer, Jr., 919 Locust, Conway 72032	1971
Vestal B. Smith, Post Office Box 614, Marked Tree 72365	1972
Omer E. Bradsher, 901 West Kingshighway, Paragould 72450	1972
SUB-COMMITTEE ON LIAISON WITH THE STATE BOARD OF HEALTH	
Purcell Smith, Jr., 4001 West Capitol, Little Rock 72205—*CHAIRMAN*	1970
Jack Dobson, 110 North Clifton, Fordyce 71742	1971
M. R. Springer, Jr., 236 Central, Hot Springs 71901	1971
Charles G. Swingle, 105 Nathan, Marked Tree 72365	1971
Hugh R. Edwards, 607 Woodruff, Searcy 72143	1972
SUB-COMMITTEE ON MATERNAL AND CHILD WELFARE	
Roger Bost, 4301 West Markham, Little Rock 72205	1970
John W. Trieschmann, 236 Woodbine, Hot Springs 71901—*CHAIRMAN*	1971
Robert L. Sherman, Post Office Box 3007, Fort Smith 72901	1971

	Term Expires
J. W. Burnett, 414 Hazel, Texarkana 75501	1972
SUB-COMMITTEE ON TUBERCULOSIS	
John C. Schultz, 900 North University, Little Rock 72207—*CHAIRMAN*	1970
Joe B. Scruggs, 1612 Maryland, Little Rock 72202	1970
Charles C. Tracy, 1421 Cherry, Pine Bluff 71601	1971
Joseph G. Shelton, Jr., Box 697, Ashdown 71822	1971
Harley Darnall, 500 Lexington, Fort Smith 72901	1972
Kenneth A. Siler, 651 North Spring, Harrison 72601	1972
SUB-COMMITTEE ON AGING	
Thomas H. Wortham, 813 Marshall Road, Jacksonville 72076	1970
Woodbridge Morris, 5324 West Markham, Little Rock 72205	1970
Sanford C. Monroe, 1421 Cherry, Pine Bluff 71601—*CHAIRMAN*	1971
John F. Guenthner, 126 West Sixth, Mountain Home 72653	1971
Joseph A. Norton, Donaghey Building, Little Rock 72201	1972
SUB-COMMITTEE ON PHYSICAL FITNESS AND SCHOOL HEALTH	
Francis M. Henderson, 1310 Cherry, Pine Bluff 71601	1970
J. A. Harrel, Jr., 811 North Grant, No. 5, Little Rock 72205	1971
Robert Langston, 520 North Spring, Harrison 72601—*CHAIRMAN*	1971
Jack W. Kennedy, 1008 Pine, Arkadelphia 71923	1972
SUB-COMMITTEE ON INDUSTRIAL HEALTH	
Philip T. Cullen, 500 South University, Little Rock 72205	1970
William B. Harrell, 317 State Line, Texarkana 75501	1971
James C. Bethel, 221 East Sevier, Benton 72015—*CHAIRMAN*	1971
Gerald K. Patton, 100 North 16th, Fort Smith 72901	1972
William L. Steele, 5520 West Markham, Little Rock 72205	1972
SUB-COMMITTEE ON MENTAL HEALTH	
W. O. Young, Donaghey Building, Little Rock 72201—*CHAIRMAN*	1970
George G. Regnier, 500 South University, Little Rock 72205	1970
Edwin V. Dildy, Jr., 122 West Hempstead, Nashville 71852	1970
W. C. Whaley, 203 East Church, Warren 71671	1971
James D. Rankin, 351 West Parker, Hamburg 71646	1971
William G. Reese, 4301 West Markham, Little Rock 72205	1972
W. Payton Kolb, 1120 Marshall, Little Rock 72202	1972
R. H. Whitehead, Jr., Donaghey Building, Little Rock 72201	1972
IMMUNIZATION SUB-COMMITTEE	
Vida F. Gordon, 4301 West Markham, Little Rock 72205	1970
Fred Lee, West Markham at Tyler, Little Rock 72205	1970
Wilbur G. Lawson, 207 East Dickson, Fayetteville 72701—*CHAIRMAN*	1971
Howard R. Harris, 207 South Elm, Dumas 71639	1971
Joseph L. Rosenzweig, 236 Woodbine, Hot Springs 71901	1972
Thomas E. Townsend, 1310 Cherry, Pine Bluff 71601	1972
SUB-COMMITTEE ON TRAFFIC SAFETY	
Richard B. Clark, 4301 West Markham, Little Rock 72205	1970
Ray Jouett, Donaghey Building, Little Rock 72201	1970
Lonnie R. Turney, Second and Pine, McGehee 71654	1971
Louise Henry, 602 Garrison, Fort Smith 72901	1972
James G. Stuckey, 500 South University, Little Rock 72205	1972
Albert R. Hammon, 520 North Spring, Harrison 72601	1972
J. Warren Murry, 1749 North College, Fayetteville 72701—*CHAIRMAN*	1972
SUB-COMMITTEE ON LIAISON WITH VOCATIONAL REHABILITATION	
John Wood, 907 Mena, Mena 71953	1970
H. King Wade, Jr., 231 Central, Hot Springs 71901	1970
Major E. Smith, 124 East Peddicord, Dermott 71638	1971
Paul G. Henley, 700 West Faulkner, El Dorado 71730—*CHAIRMAN*	1971
James D. Mashburn, 207 East Dickson, Fayetteville 72701	1971
Rhys A. Williams, 651 North Spring, Harrison 72601	1972
Robert H. Atkinson, 236 Central, Hot Springs 71901	1972
COMMITTEE ON MEDICAL EDUCATION	
Paul Wallick, 216 South Main, Monticello 71655	1970
Lee B. Parker, 241 West Spring, Fayetteville 72701—*CHAIRMAN*	1970
Winston K. Shorey, 4301 West Markham, Little Rock 72205	1971
Oliver C. Raney, 1720 West 42nd, Pine Bluff 71601	1971
Marlin B. Hoge, 314 North Greenwood, Fort Smith 72901	1972
W. H. Calaway, North Arkansas Clinic, Batesville 72501	1972
SUB-COMMITTEE ON POSTGRADUATE EDUCATION	
George K. Mitchell, Post Office Box 2181, Little Rock 72203	1970
James S. Taylor, 4301 West Markham, Little Rock 72205	1971
James K. Patrick, 241 West Spring, Fayetteville 72701	1971
T. A. Feild, III, 3600 North "O", Fort Smith 72901	1971
Bobby E. McKee, 505 East Matthews, Jonesboro 72401	1971
George F. Wynne, 113 West Cypress,	

	Term Expires
Warren 71671	1972
COMMITTEE ON HOSPITALS	
Art B. Martin, 1500 Dodson, Fort Smith 72901—*CHAIRMAN*	1970
Martin F. Heidgen, 1808 West Main, Russellville 72801	1970
George B. Talbot, 1421 Cherry, Pine Bluff 71601	1971
John Wood, 907 Mena, Mena 71953	1971
Wright Hawkins, 100 South 14th, Fort Smith 72901	1972
M. H. Harris, 1205 McLain, Newport 72112	1972
COMMITTEE ON PUBLIC RELATIONS	
G. Thomas Jansen, 500 South University, Little Rock 72205	1970
Neil E. Compton, Post Office Box 209, Bentonville 72712	1970
Gordon P. Oates, 1612 Maryland, Little Rock 72202	1971
Paul A. Wallick, 216 South Main, Monticello 71655	1971
A. C. Bradford, 100 South 14th, Fort Smith 72901—*CHAIRMAN*	1972
G. Allen Robinson, 707 North Vine, Harrison 72601	1972
SUB-COMMITTEE ON LIAISON WITH THE AUXILIARY	
Jim E. Lytle, North Arkansas Clinic, Batesville 72501	1972
C. Randolph Ellis, 1004 South Main, Malvern 72104	1972
John W. Vinzant, 22 East Spring, Fayetteville 72701	1972
M. R. Springer, Jr., 236 Central, Hot Springs 71901	1972
SUB-COMMITTEE ON STATE HEALTH AND MEDICAL RESOURCES FOR CIVIL DEFENSE	
Quin M. Baber, 212 West Sevier, Benton 72015	1970
John B. Nettles, 4301 West Markham, Little Rock 72205	1971
Monroe D. McClain, 1120 Marshall, Little Rock 72202	1971
Edgar J. Easley, State Health Department, Little Rock 72201—*CHAIRMAN*	1971
L. U. Rushing, Post Office Box 1912, Texarkana 75501	1971
Russell W. Cobb, 1420 Potts, Malvern 72104	1971
William B. Harrell, Jr., 317 State Line, Texarkana 75501	1972
ADVISORY SUB-COMMITTEE TO THE MEDICAL ASSISTANTS SOCIETY	
E. Frank Reed, Jr., 916 Cherry, Pine Bluff 71601	1970
Millard W. Black, 705 North Ash, Little Rock 72205	1971
A. C. Bradford, 100 South 14th, Fort Smith 72901—*CHAIRMAN*	1971
Betty Lowe, 401 East Fifth Street, Texarkana 75501	1971
George Burton, 427 West Oak, El Dorado 71730	1972
James Mashburn, 207 East Dickson, Fayetteville 72701	1972
COMMITTEE ON ARRANGEMENTS FOR ANNUAL SESSION	
J. Harry Hayes, Jr., 500 South University, Little Rock 72205	1970
Amail Chudy, 1801 Maple, North Little Rock 72114	1970
John W. Lane, 1612 Maryland, Little Rock 72202	1970
Joseph L. Rosenzweig, 236 Woodbine, Hot Springs 71901	1971
John McCollough Smith, 4000 Woodlawn, Little Rock 72205	1971
Art B. Martin, 1500 Dodson, Fort Smith 72901	1971
Joseph S. Robinette, 1722 Doctors Drive, Pine Bluff 71601	1971
Betty Ann Lowe, 401 East Fifth, Texarkana 75501	1971
A. S. Koenig, 922 Lexington, Fort Smith 72901	1972
Wright Hawkins, 100 South 14th, Fort Smith 72901—*CHAIRMAN*	1972
Dwight W. Gray, 110 West Chestnut, Marianna 72360	1972
COMMITTEE ON VETERANS ADMINISTRATION AFFAIRS	
James R. Walt, 500 South University, Little Rock 72205	1970
A. J. Forestiere, Post Office Box 106, Harrisburg 72432—*CHAIRMAN*	1971
John H. Delamore, 1100 West Third, Fordyce 71742	1971
J. Arnold Henry, 511 West Main, Russellville 72801	1971
E. Z. Hornberger, Post Office Box 3006, Fort Smith 72901	1971
Chalmers S. Pool, VA Hospital, North Little Rock 72114	1972
COMMITTEE ON INSURANCE	
Thomas D. Honeycutt, 509 Cross, Little Rock 72201—*CHAIRMAN*	1970
David H. Newbern, St. Vincent Infirmary, Little Rock 72205	1970
Charles F. Wilkins, 511 West Main, Russellville 72801	1971
L. J. Pat Bell, 626 Poplar, Helena 72342	1971
J. Harry Hayes, Jr., 500 South University, Little Rock 72205	1972
T. S. Van Duyn, Post Office Box 110, Stuttgart 72160	1972
COMMITTEE ON LIAISON WITH THE NURSING PROFESSION	
Frank Padberg, 500 South University, Little Rock 72205—*CHAIRMAN*	1970
James W. Headstream, 500 South University, Little Rock 72205	1970
J. R. Pierce, Jr., 1712 West 42nd Avenue, Pine Bluff 71601	1971
James D. Harbison, Lake Village Infirmary, Lake Village 71653	1971

	Term Expires
R. H. Whitehead, Jr., Donaghey Building, Little Rock 72201	1972
Fred C. Inman, Court Street, Carlisle 72024	1972

COMMITTEE ON MEDICINE AND RELIGION

Jerome S. Levy, 500 South University, Little Rock 72205—*CHAIRMAN*	1970
Bruce E. Schratz, 1801 Maple, North Little Rock 72114	1970
Kenneth A. Siler, 651 North Spring, Harrison 72601	1971
Fred Gordy, 552 Locust, Conway 72032	1971
C. Randolph Ellis, 1004 South Main, Malvern 72104	1972
John H. Miller, 415 Hospital Drive, S.W., Camden 71701	1972

COUNCIL APPOINTED COMMITTEES

COMMITTEE ON CONSTITUTIONAL REVISION

Lee B. Parker, 241 West Spring, Fayetteville 72701—*CHAIRMAN*
Harry Hayes, Jr., 500 South University, Little Rock 72205
Paul Rogers, P. O. Box 3096, Station A, Fort Smith 72901
H. King Wade, Jr., 231 Central, Hot Springs 71901
Ross Maynard, National Building, Pine Bluff 71601

BUDGET COMMITTEE

W. R. Brooksher, Post Office Box 3096, Station A, Fort Smith 72901—*CHAIRMAN*
H. W. Thomas, 105 North Freeman, Dermott 71638
Ben N. Saltzman, 126 West 6th, Mountain Home 72653

SENIOR MEDICAL DAY COMMITTEE

Ralph Downs, 5512 West Markham, Little Rock 72205—*CHAIRMAN*
Calvin R. Simmons, 1714 West 42nd, Pine Bluff 71601

LONG RANGE PLANNING COMMITTEE

Thomas H. Wortham, 813 Marshall Road, Jacksonville 72076—*CHAIRMAN*
Glen F. Baker, 411 East Matthews, Jonesboro 72401
Robert B. Benafield, 919 Locust, Conway 72032
Carl Northcutt, Route 1, Box 21-D, Stuttgart 72160
Lee B. Parker, 241 West Spring, Fayetteville 72701
Berry L. Moore, Jr., 615 West Grove, El Dorado 71730
Robert M. Bransford, 401 East 5th, Texarkana 75501
Martin Eisele, 101 Whittington, Hot Springs 71901
George K. Mitchell, Post Office Box 2181, Little Rock 72205
Arthur Moore, 675 Lollar Lane, Fayetteville 72701
Neil E. Crow, 1500 Dodson, Fort Smith 72901

PHYSICIAN TO WORK WITH AMA COMMITTEE ON QUACKERY

Frank M. Burton, 101 Whittington, Hot Springs 71901

ARKANSAS STATE ADVISORY COMMITTEE TO THE SELECTIVE SERVICE SYSTEM

Joseph Ledbetter, 804 South Church, Jonesboro 72401
Edwin L. Dunaway, 919 Locust, Conway 72032
T. S. Van Duyn, Post Office Box 110, Stuttgart 72160
W. A. Regnier, 115 Pine, Crossett 71635
Allen R. Russell, 1024 Poplar, Pine Bluff 71601
James F. Clark, 524 West Faulkner, El Dorado 71730
Gerald H. Teasley, 401 East 5th, Texarakana 75501—*CHAIRMAN*
Frank Burton, 101 Whittington, Hot Springs 71901
John T. Herron, State Health Department, Little Rock 72201
Robert A. Calcote, 627 Donaghey Building, Little Rock 72201
Ulys Jackson, 118 South Pine, Harrison 72601
Friedman Sisco, 101 South Shilo, Springdale 72764
L. A. Whittaker, 708 Lexington, Fort Smith 72901

COMMITTEE FOR CORRELATION OF GOVERNMENT PLANS

L. A. Whittaker, 708 Lexington, Fort Smith 72901—*CHAIRMAN*
Winston K. Shorey, 4301 West Markham, Little Rock 72205
G. Thomas Jansen, 500 South University, Little Rock 72205
John T. Herron, State Health Department, Little Rock 72201
Ben N. Saltzman, 126 West 6th, Mountain Home 72653
Roger B. Bost, 4301 West Markham, Little Rock 72205
T. A. Feild, III, 3600 North "O", Fort Smith 72901
Jerome Levy, 500 South University, Little Rock 72205

COMMITTEE ON PHARMACY

Martin F. Heidgen, 1808 West Main, Russellville 72801
Art B. Martin, 1500 Dodson, Fort Smith 72901
Willie R. Harris, England Hospital, England 72046—*CHAIRMAN*

STUDENT AMA LIAISON COMMITTEE

Alfred Kahn, Jr., 1300 West Sixth Street, Little Rock 72201—*CHAIRMAN*
Elvin Shuffield, 1000 Wolfe, Little Rock 72202
William A. Snodgrass, Jr., Donaghey Building, Little Rock 72201
Thomas D. Honeycutt, 509 Cross, Little Rock 72201

MEDICAL STUDY COMMITTEE TO THE DEPARTMENT OF CORRECTION

Walter J. Wilkins, 1421 Cherry, Pine Bluff 71601—*CHAIRMAN*
Joe B. Scruggs, 1612 Maryland, Little Rock 72202
Wayne Lazenby, 145 West Waterman, Dumas 71639
Thomas J. Smith, 500 South University, Little Rock 72205
William O. Young, Donaghey Building, Little Rock 72201
Paul G. Henley, 700 West Faulkner, El Dorado 71730
Howard Schwander, 1115 Bishop, Little Rock 72202

COMMITTEE ON EMERGENCY HEALTH CARE SERVICES

Joseph A. Norton, 8570 Cantrell Road, Little Rock 72207—*CHAIRMAN*
Ben N. Saltzman, 126 West Sixth, Mountain View 72653
Louise Henry, 602 Garrison, Fort Smith 72901
Art B. Martin, 1500 Dodson, Fort Smith 72901
John P. Wood, 907 Mena, Mena 71953

21-MAN COMMITTEE

General Practice:
Joe Verser, Box 106, Harrisburg 72432
C. Lewis Hyatt, 515 North Main, Monticello 71655
Radiology:
Joseph A. Norton, 8570 Cantrell Road, Little Rock 72207

Pathology:
Kenneth R. Duzan, 443 West Oak, El Dorado 71730
Internal Medicine:
Clyde Tracy, 1421 Cherry, Pine Bluff 71601
Charles F. Wilkins, 511 West Main, Russellville 72801
General Surgery:
Wright Hawkins, 100 South 14th, Fort Smith 72901
Gilbert Dean, Donaghey Building, Little Rock 72201
Martin Eisele, 101 Whittington, Hot Springs 71901
Urology:
Carl Wilson, 1500 Dodson, Fort Smith 72901
Allergy:
Purcell Smith, 4001 West Capitol, Little Rock 72205
Anesthesiology:
John L. Weare, 1120 Marshall, Little Rock 72202
Dermatology:
A. C. Bradford, 100 South 14th, Fort Smith 72901
Ophthalmology:
James L. Smith, 623 Woodlane, Little Rock 72201
ENT:
E. L. Milner, 500 South University, Little Rock 72205
Obstetrics-Gynecology:
Robert McCrary, 505 West Main, Hot Springs 71901
Neurology and Neurosurgery:
Robert Watson, 1026 Donaghey Building, Little Rock 72201
Psychiatry:
Frank Westerfield, 1120 Marshall, Little Rock 72202
Pediatrics:
T. E. Townsend, 1310 Cherry, Pine Bluff 71601
Orthopedics:
Elvin Shuffield, 1000 Wolfe, Little Rock 72202
CHAIRMAN: C. C. Long, 110 West Commercial, Ozark 72949



MRS. CARL PARKERSON

Hot Springs

President, 1969-1970

WOMAN'S AUXILIARY TO THE

ARKANSAS MEDICAL SOCIETY

WOMAN'S AUXILIARY TO ARKANSAS MEDICAL SOCIETY STATE CONVENTION — 1969

The Woman's Auxiliary to the Arkansas Medical Society 45th Annual Convention was held April 28-29, 1969, at the Arlington Hotel, Hot Springs, with Mrs. C. D. Burroughs, President, presiding.

Members of the Auxiliary and Society were deeply saddened by the death on April 22, 1969, of Mrs. C. C. Long, Jr., President of Woman's Auxiliary to American Medical Society and Past-President of Arkansas Woman's Auxiliary. A Memorial Tribute to Mrs. Long was read by Mrs. Jack Kennedy, representing the Past-Presidents and recommendation made and accepted that $1,000.00 be taken from Savings Account of State Auxiliary and given to American Medical Association Education and Research Foundation.

Dr. Wallace Thomas, President, brought greetings from the Arkansas Medical Society, and Mr. Paul Schaefer, Executive Vice President of Arkansas Medical Society, offered help to the Auxiliary and urged members to carry work forward. Members were welcomed to convention by Mrs. John Trieschmann, President, Garland County Auxiliary, and Mrs. William Joe James gave the response. Amendments to the By-Laws to the State Constitution of the Auxiliary concerning membership dues and addition of WASAMA were adopted. Oral reports were given by committee chairmen and officers with a special report to Auxiliary members by the President, "A Letter to Dr. Slaughter," refuting his book, "The Doctor's Wife" with her evaluation of the doctors' wives she has known and worked with this year.

The following slate of officers was elected for 1969-70:

President—Mrs. Carl Parkerson, Hot Springs
President-elect—Mrs. Lynn Harris, Hope
Northeast Vice-President—Mrs. Asa Crow, Paragould
Northwest Vice-President—Mrs. W. E. King, Jr., Russellville
Southeast Vice-President—Mrs. W. J. James, Pine Bluff
Southwest Vice-President—Mrs. James Guthrie, Camden
Recording Secretary—Mrs. Carl Wilson, Fort Smith
Treasurer—Mrs. W. Myers Smith, North Little Rock

One hundred twenty-six (126) registrations were reported by Mrs. Robert Lee Hill, Chairman.

Sixteen Past-Presidents attended the Past-President's breakfast on Tuesday morning at the Downtowner, Mrs. James Branch, Chairman.

The Auxiliary joined the Society in a Memorial Service for deceased members of both organizations. A necrology list was read by Mrs. Burroughs of the following Auxiliary members: Mrs. J. J. Monfort, Batesville; Mrs. F. Homer Jones, Piggott; Mrs. Charles Wells, Morrilton; Mrs. Donald M. Meador, Fort Smith; Mrs. Charles Holt, Fort Smith; Mrs. Lloyd Barta, Fort Smith; Mrs. C. C. Long, Jr., Ozark, and Mrs. Kenneth Thompson, Fort Smith.

At a 12:00 luncheon on Monday in the Main Dining Room of the Arlington, members of the Auxiliary and Medical Society paid tribute to Mrs. C. C. Long, Jr., President of Woman's Auxiliary to AMA. The invocation was given by Dr. Tom Ed Townsend. Speaking for the Past-Presidents, Mrs. Louis K. Hundley honored Esther as a beloved friend and co-worker, a woman of faith. Dr. Wallace Thomas, President of the Society, spoke of her with pride and gratitude to God, and Auxiliary President, Mrs. Burroughs, closed with a passage from the Book of Esther, and asked doctors' wives to respond to open doors and to the challenge of Auxiliary work as Esther did.

At a luncheon on Tuesday at the Downtowner, members of Garland County Auxiliary, Mrs. Tom Burrow and Mrs. Deno Pappas, Co-Chairmen, were hostesses honoring Mrs. Carl Parkerson, President-elect of the Woman's Auxiliary to the Arkansas Medical Society.

Mrs. H. W. Keisker, Councilor to Southern Medical Auxiliary, presented awards for Doctor's Day observances to: Craighead-Poinsett, first; Sebtasian, second for counties with membership over 25, and to Greene-Clay, first; Boone, second for membership under 25.

AMA-ERF awards were presented by Mrs. Charles Wilkins to: Union County for greatest per capita donations; to Pope-Yell for greatest per cent increase; and to Boone County for most money raised from special project (Doctor's Day Rose).

(Continued on page 58)



MRS. C. C. LONG, JR.

Mrs. C. C. Long, Jr., of Ozark, was nearing the end of her year as President of the Woman's Auxiliary to the American Medical Association when she died April 22, 1969. On hearing of her death, Dr. Dwight L. Wilbur, President of the American Medical Association, commented:

"Mrs. Long typifies the finest qualities of the physician's wife, serving her husband and his profession. While her husband attended medical school at the University of Arkansas in the early 1940's, she worked as a secretary in the anatomy and chemistry departments. As a wife and mother, and an interested partner in his profession, she served exceptionally well ever since. The American Medical Association speaks for physicians and their wives everywhere in expressing sadness at this loss and sympathy to Dr. Long and family."

* * *

ESTHER LONG

By H. W. Thomas, M.D.

President, Arkansas Medical Society, 1968-69

Sunset and Evening Star
And one clear call for me!
And may there be no moaning of the bar
When I put out to Sea.

Death, especially when it comes prematurely, as it did to Mrs. Esther Long, is difficult to accept as anything other than a tragedy. Even physicians and their wives, accustomed as most of us may be to viewing this departure for the Great Beyond in a somewhat different light than most, find it hard not to ask "Why, Oh God, Why?"

Here, in the full flower of life as a mother, wife, devoted church worker, civic leader, humanitarian, writer and President of the Woman's Auxiliary to the American Medical Association with her influence extending over two continents, was truly a great American lady whose contribution to humanity is not measured by material yardsticks, but literally in human lives salvaged, immortal human souls influenced for better, people awakened to an awareness of their God-given personal worth! Here, in the simplicity, the sincerity, and humility of a "country doctor's wife," with her enthusiasm and zest for living was one who made us all, in Arkansas medicine, "stand a little taller" just because we knew her. Those of us who were privileged to know, to work with, and to love Esther treasure the experience. Those of us who, with such pardonable pride, just a few short months ago, joined this lovely lady and her gracious family as she assumed her high office to work for all people everywhere just can't quite keep from voicing a somewhat rebellious "Why, Oh God, Why?"

Her pastor phrased it so beautifully when he stressed that life is measured not in quantity but in quality. Certainly, the quality of Esther Long's life places her in the forefront of American Medicine's great. Arkansas, the Auxiliary, American Medicine, and our Nation have all been enriched by the life of this humanitarian lady.

We, the Doctors of Arkansas and our wives, can only say to Dr. Cliff Long and his family, "Thank you for giving us Esther."

IN MEMORIAM

Madam President:

It was my privilege to install Mrs. C. C. Long, Esther, as President of the Woman's Auxiliary to the Arkansas Medical Society, April 19, 1960, in Pine Bluff. I attended her installation as President-elect of the Auxiliary to the American Medical Association in Atlantic City, June, 1967. I shared the pleasure of her inauguration as

President of the Woman's Auxiliary to the American Medical Association, June, 1968, in San Francisco. Since she was unable to finish her term in office, it is my privilege to pay tribute to her in death.

Paraphrasing the words of the clergy at her Memorial Service in Ozark, April 25, 1969:

"She was a devoted daughter, sister, physician's wife, mother of four children, upheld the church by her presence, her loyalty and gifts. She could do more in an hour than most people could in a week. She could upholster a chair, use a spade to plant a tree, make a speech before a large group of people. She had wisdom and courage, warmth of heart, and love for her fellowman.

"Quoting from the maxims of Solomon found in the last Chapter of Proverbs:

" 'Who can find a virtuous woman? for her price is far above rubies . . .

" 'The heart of her husband doth safely trust in her.

" 'She will do him good and not evil all the days of her life.

" 'She worketh willingly with her hands. . . .

" 'She stretcheth out her hand to the poor. . . .

" 'Strength and honour are her clothing; and she shall rejoice in time to come.

" 'She openeth her mouth with wisdom; and in her tongue is the law of kindness. . . .

" 'Her children arise up, and call her blessed; her husband also, and he praiseth her."

" 'Favour is deceitful, and beauty is vain: but a woman that feareth the Lord, she shall be praised.

" 'Give her of the fruit of her hands; and let her own works praise her in the gates'."

We thank God for every remembrance of her.

Mrs. Jack W. Kennedy
Arkadelphia, Arkansas

April 26, 1969

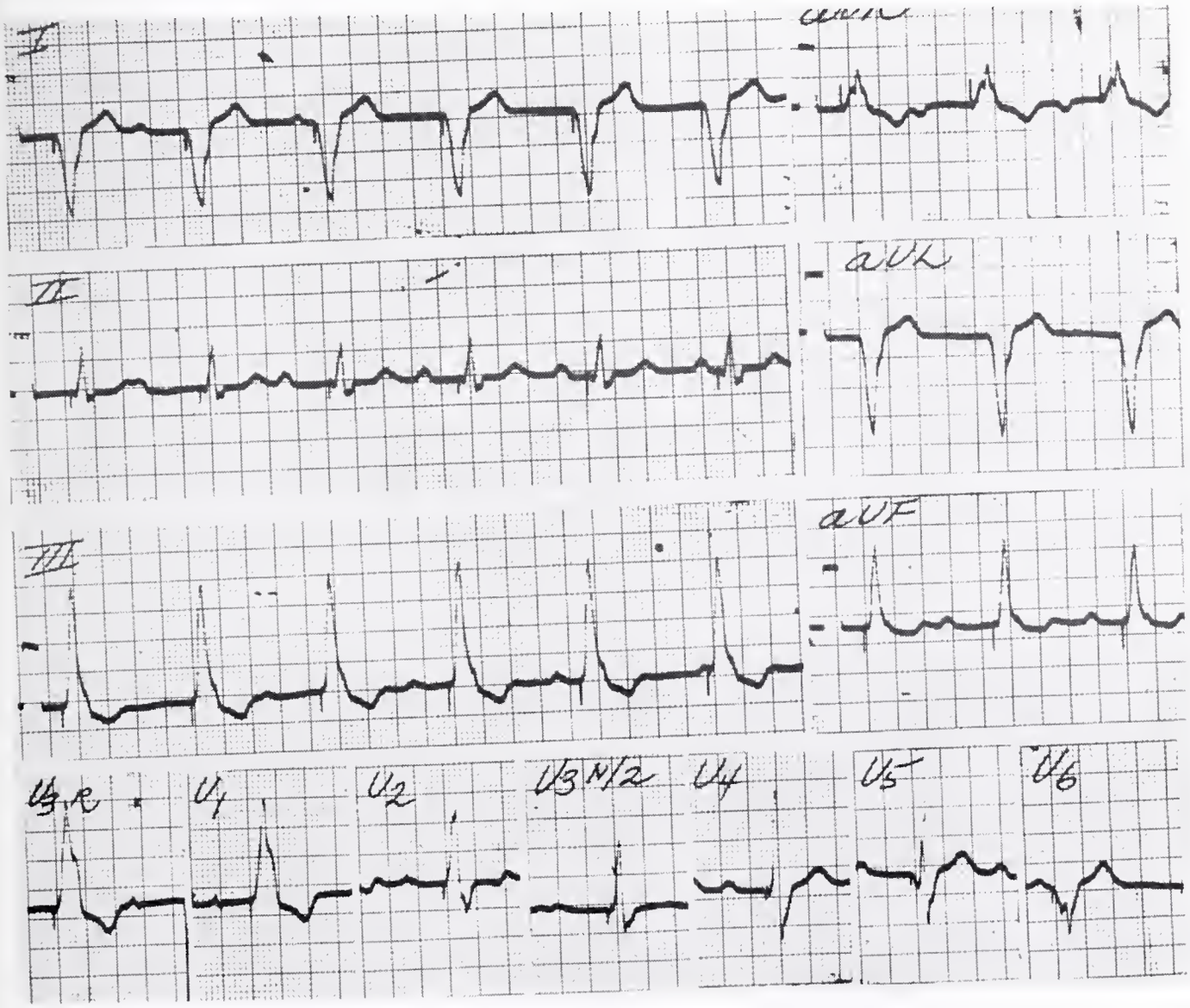
BE IT RESOLVED, that a copy of this Memorial be recorded in the minutes of the 46th Convention of the Auxiliary of the Arkansas Medical Society, a copy be sent Miss Margaret Wolfe, Executive Secretary, Woman's Auxiliary to the American Medical Association, Chicago, a copy to Dr. C. C. Long and family, Ozark.

It is because of women like Esther that the Auxiliary has a Savings Account. I move that One Thousand Dollars ($1,000.00) be taken from this fund and given to the American Medical Association Education and Research Foundation as a Memorial.

ELECTROCARDIOGRAM OF THE MONTH

AGE: 63 SEX: Male BUILD: Medium BLOOD PRESSURE: 160/80
CARDIAC DIAGNOSIS: Complete heart block.
OTHER DIAGNOSES: None.
MEDICATION: None.
HISTORY: Repeated syncopal episodes during month prior to admission to hospital.

See Answer on Page 58



The Department of Medicine, University of Arkansas Medical Center
James S. Taylor, M.D., Professor of Medicine



EDITORIAL

Ulcerative Colitis

Alfred Kahn, Jr., M.D.

Ulcerative colitis is the subject of an excellent symposium in Gastro-Enterology, November, 1966. (Volume 51, page 746.)

Mendeloff, Monk, Siegel, and Lilienfeld have reviewed the epidemiology of ulcerative colitis in Baltimore; they found 3.5 cases per 100,000 poulation; this disease was 4.5 times as prevalent among Jews as in non-Jews. More than half of the patients had an onset of disease before fifty years. The disease tended to be one of city dwellers. The patients were in a higher socio-economic strata. The male to female ratio in patients was forty to sixty. These patients smoked and drank less than average. The ethnic origins seemed to be of little significance in this survey.

Almy and Sherlock have studied and reported on the genetic aspects of ulcerative colitis. Using twins as a mode of study, nothing conclusive could be deduced. The incidence of disease in blood relatives is greater than in spouses. Other types of review are considered unsuitable for statistical analysis unless a prospective study with careful controls is made.

Bacaner has reported on the regional colon blood flow in normal and diseased bowel. This was done using radio-isotope technique with a type of Geiger-Muller detector in the bowel. In ulcerative colitis Bacaner reports two patterns of blood flow in his small series. Two cases had a reduced blood flow and they had a minimal response to water loading. The second group had a high blood flow but it was felt that a good deal of the blood went through arterio-venous shunts.

The status of immune mechanism in ulcerative colitis has been reviewed by Kraft and Kirsner. They feel that evidence for a primary etiological relationship between ulcerative colitis and an immune response can be established at the present. They bring up the point that even if antibodies are present, are they the cause or the result of the colitis?

The Cleveland Clinic Foundation had 151 cases of primary ulcerative disease of the colon and they were compiled and studied by Hawk and Turnbull. The most interesting fact was that of these 151 patients, 87 were granulomatous colitis (Crohn's Disease), 28 were chronic ulcerative colitis, and 16 cases were unclassified. The fact that granulomatous colitis cases outnumber chronic ulcerative colitis is rather a surprise. Carcinoma as a complication occurred in 12.5% of chronic ulcerative colitis, but in only a nominal usual small number of cases of granulomatous colitis.

Gonzales-Licea and Yardley used both the electron and light microscopes to study the pathology of ulcerative colitis, which they describe as a diffuse, continuous inflammatory disease with a red granular mucosa, ulcers, and pseudo-polyps: Whereas ulcerative colitis is superficial, Crohn's Disease tends to involve the deeper layer and to skip areas of bowel thus alternating diseased with normal gut. The authors have used rectal biopsies but feel that this has diagnostic limitations, although it is a good technique for studying follow-ups. The electron microscopy of ulcerative colitis demonstrated changes but they were not specific for this disease.

Somners has written a report on the mast cells and their relationship to chronic ulcerative colitis. He feels that evidence points toward the inflammatory reaction as being due to the release of histamine by mast cells in more than usual numbers. The mast cells also take up 5 hydroxy--tryptamine; this latter substance is later released and further aggravates the inflammation.

Ulcerative colitis is still an unsolved problem as far as good treatment, but as these reports testify, much progress is being made in our understanding of the disease etiology and pathophysiology.

MEDICINE IN THE NEWS

THE MONTH IN WASHINGTON

Washington, D. C.—The Department of Health, Education and Welfare issued proposed regulations setting standards for rubella vaccine, making it possible it will be ready for distribution in limited quantities by about June 1.

The standards cover production methods, safety, purity, and potency. They were developed by the Division of Biologics Standards, a unit of the National Institutes of Health. Final regulations could be published as early as May 3. Indications were that two manufacturers would have a vaccine ready for initial distribution soon after the regulations had been made final.

"This means that we are one step closer to the prevention of a disease that has caused an untold number of tragic births," HEW Secretary Robert H. Finch said when the proposed regulations were issued.

"We are moving ahead to combat German measles in the quickest manner consistent with public safety."

The regulations apply to vaccines containing a live virus strain known as HPV-77, which is grown in either duck embryo or dog kidney cell culture systems. Experimental vaccines produced in accordance with the standards have undergone extensive community testing in the United States and abroad. Two manufacturers, Merck, Sharpe & Dohme and Philips, Roxane Laboratories have produced vaccines based on this strain.

"We hope that more than one vaccine will be available," Dr. Robert Q. Marston, NIH Director, said. "Regulations covering the use of other virus strains and culture media for rubella vaccine production will be formulated on the basis of extensive tests now going on."

Smith, Kline & French Laboratories has tested widely an experimental vaccine containing the Cendehill strain of rubella virus.

An HEW announcement said:

"German measles is a threat to susceptible pregnant women at any time, but the treat increases significantly during epidemic years. One of the most tragic and disastrous epidemics to hit the United States in modern times was the German measles epidemic of 1964-1965. This resulted in about 50,000 abnormal pregnancies. About 20,000 infants were born with such crippling defects as mental retardation, heart disease, blindness and deafness. The remaining 30,000 pregnancies terminated in miscarriage or stillbirth.

* * *

The Food and Drug Administration has taken the first step to halt the marketing of 78 antibiotic combination products.

The ultimate action was recommended by the National Academy of Sciences-National Research Council, which is evaluating the effectiveness of about 3,600 new drugs marketed from 1938 to 1962.

Generally, the 78 products were found ineffective as fixed combinations for claims made in their labeling. The FDA emphasized that this does not necessarily mean that either the antibiotics or other active ingredients of the products are ineffective when used alone.

"But the use of two or more active ingredients in the treatment of a patient who can be cured by one is irrational therapy," said Herbert L. Ley, Jr., M.D., Commissioner of Food and Drugs. "It exposes the patient to an unnecessary risk. Antibiotics should be used like a rifle rather than a shotgun."

The majority of the 78 products are antibiotic-sulfa combinations in tablet, capsule, or liquid form. Also included are 16 penicillin-streptomycin combinations that are given by injection.

Other antibiotics used in the preparations include erythromycin, neomycin, tetracycline, chlortetracycline, nystatin, oxytetracycline, oleandomycin, and triacetyloleandomycin. In addition, some of the preparations contain analgesics, vitamins, or other ingredients.

The antibiotics combinations are the products of 21 different manufacturers, including Chas.

Pfizer & Co.; Eli Lilly & Co.; Lederle Laboratories, a division of American Cyanamid Co.; Bristol Laboratories, Inc., a division of Bristol-Myers Co.; Merck & Co.; E. R. Squibb & Sons, Inc., a subsidiary of Squibb Beech-Nut, Inc.; Upjohn Co.; Wyeth Laboratories, Inc., a subsidiary of American Home Products Corp.; Abbott Laboratories; and Hoffman-La Roche, Inc. In an earlier proposal last December, the FDA similarly moved against products marketed by Squibb, Lederle and Upjohn.

Many of the affected products have been promoted widely and found wide acceptance in the medical profession. Several of the maufacturers promptly said they would contest the FDA ruling and others were expected to oppose it also. The manufacturers were given 30 days to submit any new data on efficacy of the products.

There were 12 products in the first groups, announced last December. A decision still was pending on whether manufacturers of those products should have additional time to submit evidence of efficacy.

The FDA can halt the marketing of antibiotic-containing preparations by deleting them from regulations listing the antibiotic drugs acceptable for certification. Antibiotics and insulin, unlike other drugs, must be certified on a batch-by-batch basis before they can be marketed.

* * *

Two spokesmen for the medical profession asserted before a Senate subcommittee that the policies and scientific journals of their organizations are not biased in favor of the prescription drug industry because of the drug advertising revenue.

Sen. Gaylord Nelson (D., Wis.), chairman of the Senate Monopoly Subcommittee which is making a broad study of the ethical drug industry, accused the medical journals of following the pharmaceutical industry's line to get advertising dollars.

Both Dr. Edward R. Annis, a member of the AMA Board of Trustees, and Dr. Maynard I. Shapiro, president of the AAGP, emphatically denied the charge. Both cited the high, objective advertising standards of their organizations' publications.

"The American Medical Association's programs and policies have never been, are not now, will never be shaped by any dependence on the drug industry," Dr. Annis said. "And to assure that there is no conflict of interest, the AMA has consistently separated the editorial management, advertising acceptance, and business management of each of its scientific publications. . . .

"We believe that no publication surpasses our own standards for acceptable advertising."

Nelson sharply criticized the Journal of the American Medical Association as to the ads it carried on chlormycetin after the drug had been judged to be extremely dangerous. Annis acknowledged that "one Madison Avenue effort . . . slipped through the net" of AMA advertising standards. But he pointed out the various warnings on the drug carried in the editorial content of JAMA and other AMA publications.

"Advertising is screened by a group of physicians, all of whom we consider qualified to perform their task," Dr. Shapiro said. "We don't list the names of these physicians in our magazines because we believe they prefer a degree of anonymity. All are medical school faculty members and all, in our opinion, are well qualified to screen pharmaceutical advertising."

Dr. Shapiro also said that at least two drugs firms had canceled ads in AAGP publications after they had carried editorials adverse to the companies.

* * *

The Nixon Administration recommended to Congress that the Hill-Burton hospital construction and improvement program be changed to permit block allocation of grant funds to states.

Since enactment of the first Hill-Burton legislation in 1946, federal grants for it have been earmarked for specific purposes.

In a statement to the House Health Subcommittee, Robert H. Finch, secretary of Health, Education and Welfare, said the nation's health needs had changed since the Hill-Burton program was started.

Today's needs, he said, are twofold:

—Modernization or replacement of existing and obsolete acute care facilities in the hospitals and

—Expansion of other kinds of medical facilities to reduce the pressures on hospitals and help curb skyrocketing medical costs.

He recommended a $150 million annual grant authorization for construction, replacement or modernization of the most critical types of health facilities.

"Additionally, we recommend the removal of the existing Hill-Burton categories to provide a better balance of health care facilities in the

community by assisting those kinds of facilities which have traditionally been neglected or in short supply," he said.

Expansion of neighborhood health center programs also was recommended. The HEW statement said it was required to meet the health needs of the poor.

H. Phillip Hampton, M.D., Tampa, Fla., testifying for the AMA, said the AMA continues its long-standing support of the Hill-Burton program but believes that "the major need that exists today is for the improvement and effective use of existing facilities."

"Priority for modernization and the upgrading of existing facilities will lessen the strain on the available supply of health personnel needed to provide services obtained in hospitals and related facilities," he said.

The AMA supported a provision in one of the two Hill-Burton bills before the subcommittee that would permit states to transfer funds from one allocation to another, providing "further elasticity to the transfer of funds from construction to modernization."

The AMA opposed as unnecessary the establishment of Hill-Burton priorities for construction or modernization of out-patient facilities or facilities to provide comprehensive health care. Such needs should be met through other laws already enacted, the AMA said. Dr. Hampton explained:

"We hope to make this point clear: We understand the part played by hospital out-patient departments in providing a place for necessary services to a community, and to the role played in teaching and training. But we believe that any need for out-patient facilities, separate and apart from the hospital, or for free-standing diagnostic and treatment centers—or whatever they may be called—can be met through other programs which provide federal assistance. The Hill-Burton program is not the appropriate vehicle for grants or priorities for such separated facilities. Nothing has been demonstrated which indicates either public benefit or public acceptance for this concept of providing ambulatory medical care through hospital operated, rather than physician operated, neighborhood clinics."

* * *

The Arkansas Medical Society honored the Senior Medical students at the University of Arkansas School of Medicine with a dinner on May 7th at the Little Rock Country Club. Dr. Edward R. Annis, a past president of the American Medical Association, was the speaker for the event. Dr. Ralph Downs of Little Rock was in charge of arrangements. Dr. Ross Fowler of Harrison presided.



OBITUARY

Mrs. Esther Long, wife of Dr. C. C. Long, Jr., of Ozark, died April 22, 1969, at a Russellville hospital, where she had been a patient for about three weeks.

Mrs. Long was president of the Woman's Auxiliary to the American Medical Association at the time of her death. She had just returned from a three-week tour of France as a guest of the French Government.

She was the daughter of the late Mary Frances Noe and John Morgan Callahan and was born April 9, 1920, in Wetmore, Kansas. She attended the University of Kansas, where she met and married Dr. Long while both were undergraduates.

Mrs. Long worked in the chemistry department at the University of Arkansas School of Medicine in Little Rock while Dr. Long attended classes there. Dr. Long located in Ozark for the practice of medicine after World War II.

Mrs. Long formed a Cub Scout Pack and Brownie Troop in Ozark. She was active in the Parent-Teacher Association and served as chairman of the Ozark Community Improvement Committee for several years. She was a member of the First United Methodist Church.

Mrs. Long was very active in civic and medical organizations. In 1956, she was named "Ozark Citizen of the Year" and in 1964 was selected "Arkansas Woman of the Year" by Progressive Farmer Magazine. She served as president of the Woman's Auxiliary to the Arkansas Medical Society in 1960-1961. She served several terms as chairman of committees on the national level of the Auxiliary and served as First Vice President of the AMA Auxiliary before being named to the position of president-elect in 1967. She was vice-chairman of the State Training School Board, a member of the Arkansas Commission on the Status of Women and a charter

member of the Arkansas Women's Committee on Public Affairs.

Survivors in addition to her husband include one son, Cliff Long, III, and three daughters—Mrs. Mary Frances Gardner, Joan Elizabeth and Esther June; one brother, Clarence Callahan of Oakville, Ontario, Canada; and one sister, Mrs. Aileen Lewellyn of Montrose, Michigan.

A Franklin County Library Building Fund has been established as a memorial to Mrs. Long.



PERSONAL AND NEWS ITEMS

Physicians Participate in Program

Dr. Kenneth Jones, Little Rock; Dr. Hoyt Kirkpatrick, Fort Smith; Dr. Tom P. Coker, Fayetteville; and Dr. Carl Kendrick, Fayetteville, participated at a meeting May 2nd arranged and conducted by the Arkansas Medical Society Committee on Physical Fitness and School Health. The program was on "Athletic Injuries: Prevention, Treatment, Rehabilitation."

Dr. Saltzman Attends Conference

Dr. Ben Saltzman of Mountain Home discussed providing health care for rural areas at the AMA Conference on the Socio-Economics of Health Care in Chicago in March.

Dr. Schultz Appointed

Dr. John C. Schultz of Little Rock has been appointed by Governor Rockefeller to the Board of the Arkansas Tuberculosis Sanatorium.

Dr. Fowler Kills Turkeys

Dr. Ross Fowler of Harrison recently killed two wild turkeys with one shot in the Bear Creek area of Bull Shoals Lake. He said the gobblers were fighting when he fired on them with a shotgun.

Dr. Wortham Elected

Dr. Thomas H. Wortham of Jacksonville was recently elected as an alumnus member in Alpha Chapter of Alpha Omega Alpha, Honorary Medical Society, because of his distinguished career and contributions to medicine. He has also recently been elected chairman of the regional advisory group of the Arkansas Regional Medical Program.

Dr. Rodgers Sells Hospital

Dr. Porter Rodgers, Jr., announced that the Porter Rodgers Hospital at Searcy was recently sold to Intermed International, Inc., of Pine Bluff. Dr. Porter Rodgers, Sr., Dr. Porter Rodgers, Jr., and the daughter of Dr. Rodgers, Sr., were sole owners. They and their associates will continue to operate the hospital.

Physicians Adopt Work Schedule

Dr. M. H. Wilmoth of Nashville announced that he and Dr. John Wesson and Dr. Edwin Dildy have adopted a work schedule in order to provide necessary care for the sick and injured on weekends and at night.

Dr. Saltzman Participates in Conference

At the 22nd AMA Conference on Rural Health at Philadelphia in March, Dr. Ben N. Saltzman of Mountain Home told his colleagues that rural physicians should take the leadership in comprehensive health planning for their areas.

Physicians Hold Forum

The Arkansas and Oklahoma Divisions of the American Cancer Society sponsored a physicians' forum on various sites of cancer on April 11th and 12th. The meeting was held at Arrowhead Lodge, Lake Eufaula. Dr. J. H. Burge of Lake Village is a member of the Division Board of Directors and Dr. Arthur F. Hoge, Jr., of Fort Smith was chairman for this event.

Physician Exhibits Sculpture

Dr. A. F. Hoge of Fort Smith exhibited his metal sculpture of a crane at a recent art exhibit in Fort Smith. The collection of art works at the exhibit was done by Sebastian County

Medical Society doctors and members of their families.

Dr. Henry Recognized

An article in the March/April issue of AMA's PR DOCTOR recognizes Dr. Morriss Henry as a public relations "stemwinder." A Fayetteville ophthalmologist, Dr. Henry is a member of the Arkansas House of Representatives.

Dr. Millard Represents Speakers Bureau

Dr. Roy Millard of Russellville spoke to the Central Arkansas Valley District Nurses' Association at Russellville on May 22nd. The subject of his talk was "Medical Progress."



PROCEEDINGS OF SOCIETIES

The Washington County Medical Society has agreed to cooperate with ten Northwest Arkansas hospitals to underwrite costs of establishing a two-year associate degree program in nursing at the University of Arkansas.

Dr. James K. Patrick of Fayetteville is a member of the Sub-Committee of the Health Industry Committee of the Fayetteville Chamber of Commerce which helped initiate the program.



NEW MEMBERS

The Pulaski County Medical Society announces that DR. AUBREY C. SMITH has affiliated with that group.

Dr. Smith was born at Pine Bluff and attended high school there. He attended Arkansas Agricultural and Mechanical College at College Heights, Arkansas, and was graduated from the University of Arkansas School of Medicine in 1959. Following an internship at Arkansas Baptist Hospital, Dr. Smith served for two years as senior assistant surgeon with the United States Public Health Service. Dr. Smith completed a residency in Psychiatry at the University of Arkansas School of Medicine in 1968 and has been in practice in Little Rock since that time. He is an instructor in Psychiatry at the University of Arkansas Medical Center.

Dr. Smith is associated in practice with Drs. Broach, Busby, Good and Shannon in offices at 1201 Bishop, Little Rock.

DR. MICHAEL RUDKO has recently become a member of the Pulaski County Medical Society. Dr. Rudko is a native of Buenos Aires, Argentina. He received a B.S. degree from the Randolph-Macon College of Ashland, Virginia, in 1956 and was graduated from the University of Texas, Southwestern Medical School, in 1960. Dr. Rudko interned at Ohio State University Hospital, Columbus, Ohio, and served in the United States Air Force from 1961 to 1963. Following military service, he entered residency training in general surgery at the University of Oklahoma Medical Center. After two years at the Oklahoma Medical Center, Dr. Rudko transferred to the University of Arkansas Medical Center and completed his residency training at that institution in 1968. He obtained a Ph.D. degree from the University of Oklahoma Graduate School in June, 1966.

Since July, 1968, Dr. Rudko has been Assistant Professor of Physiology and Surgery at the University of Arkansas Medical Center and he is associated with the Veterans Administration Hospital in Little Rock in the practice of general and thoracic surgery.

DR. DONALD GENE BROWNING is a new member of the Pulaski County Medical Society. Dr. Browning was born in Hope, Arkansas. He received his B.S. degree in 1957 from Henderson State College, Arkadelphia, and in 1961 was graduated from the University of Arkansas School of Medicine. Dr. Browning interned at Martin Army Hospital, Fort Benning, Georgia.

He received his residency training in Internal Medicine at Brooke General Hospital, Fort Sam Houston, Texas. Dr. Browning was a Major in the United States Army from 1961 to 1968.

Since September, 1968, he has been specializing in Internal Medicine in association with Dr. Jerome Levy and Dr. Thomas J. Smith at the Doctors Building in Little Rock.

DR. GARNETT J. LEONARD is also a new member of the Pulaski County Medical Society. He is a native of Mereer County, Kentucky. Dr. Leonard received a B.A. degree from the University of Kentucky in 1959. In 1964, he was graduated from the University of Louisville School of Medicine. Dr. Leonard interned at Grady Memorial Hospital, Atlanta, Georgia. He served two years in the Medical Corps. Since 1965, Dr. Leonard has been located at 3115 John F. Kennedy Blvd., North Little Rock, in the general practice of medicine. He is a member of the American Academy of General Practice.

St. Francis County Medical Society has a new member, DR. PATRICIA CLIFFORD DAVIS. Dr. Davis was born in Bremen, Georgia. She was graduated from the University of Tennessee College of Medicine in March, 1965. Dr. Davis interned at City of Memphis Hospital, Memphis, Tennessee; her residency work in Pediatrics was at the same institution.

Dr. Davis has been at the Forrest View Clinic, Forrest City, Arkansas, for ten months, where she specializes in Pediatrics.

A native of Miller County, and a new member of the Miller County Medical Society, is DR. GENE TOWNSEND. He served in the United States Navy from 1948 to 1952. Dr. Townsend received his pre-medical education at Texarkana Junior College and the University of Arkansas. In 1958, he was graduated from the University of Arkansas School of Medicine. Dr. Townsend interned at Swedish Hospital, Seattle, Washington; his residency training was at the Veterans Administration Hospital, Albuquerque, New Mexico.

Before coming to Arkansas, Dr. Townsend was in practice in Canon City, Colorado, for five years. He held the position of Chief Surgeon at Colorado State Prison.

Dr. Townsend is a Fellow of the American College of Surgeons.

He is now located at 1400 College Drive, Texarkana, Texas, where he specializes in general surgery.

DR. PHILIP H. JOHNSON is a new member of the Pulaski County Medical Society. He was born in Jackson, Mississippi, and attended the Memphis State University before entering the University of Tennessee College of Medicine. His M.D. degree was received from the Tennessee College of Medicine in 1960. Dr. Johnson interned at the City of Memphis Hospital.

From 1962 until 1964, Dr. Johnson served as a Lieutenant Commander in the United States Navy.

Dr. Johnson completed four years of residency training at Baptist Memorial Hospital in Memphis and two years at Campbell Clinic in Memphis.

Since January of 1969, Dr. Johnson has been associated with the Little Rock Orthopedic Clinic, Twelfth and Van Buren Streets, Little Rock, in the practice of Orthopedic Surgery.

Woman's Auxiliary

(Continued from page 48)

The new officers were installed by Mrs. Frank Padberg, who challenged them to light the way for others.

In the President's message, Mrs. Carl Parkerson told members that the theme for Auxiliary next year will be "Ambassadors for Help," with wives a vital part of the diplomatic corps.

A post-convention board meeting and school of information followed the adjournment of the 45th Annual Convention.

Mary K. Crow (Mrs. Neil)
Recording Secretary

ANSWER—Electrocardiogram of the Month

INTERPRETATION:

RATE: 68 RHYTHM: Ventricular pacemaker
P-R: Variable QRS: .20 sec. Q-T: .48 sec.

SIGNIFICANT ABNORMALITIES:

Regulor, abnormally wide ventriculor deflections each preceded by a spiked deflection with no relatian ta previous P wave.

INTERPRETATION: Abnormal

Complete heart black with electronic ventricular pacemaker.

COMMENT:

The direction of the QRS indicates the electronic pacemaker is ottached to the lateral wall left ventricle.

TUBERCULOSIS ABSTRACTS



Sponsored by Arkansas Tuberculosis and Respiratory Disease Association

COURSE AND PROGNOSIS OF CHRONIC OBSTRUCTIVE LUNG DISEASE
A prospective study was undertaken to identify factors of importance in the prognosis of chronic obstructive pulmonary disease. Ventilatory capacity, resting heart rate, carbon dioxide levels, and the physician's assessment were the most useful indices.

A group of 200 patients with chronic obstructive lung disease were enrolled in a prospective study designed to document the course and prognosis of the condition. Patients accepted for the study were admitted to the hospital for initial and yearly follow-up examinations. At quarterly intervals they were also asked to fill in questionnaires.

The data obtained reflect the course of chronic obstructive lung disease under conservative and individualized medical management rather than the natural history of the disease. At the end of one year of follow-up, 186 patients were alive. At the end of seven years, 35 were alive, 104 were known to be dead, and four were lost to follow-up. The overall mortality was 50 per cent before six years. The variables analyzed were correlated with survival at three and five years. Initial characteristics found not to be significantly related to prognosis included age, sex, race, socioeconomic factors, sputum characteristics, bullae, and axis deviation on the electrocardiogram.

In determining three-year prognosis, the most useful indices were ventilatory capacity, resting heart rate, evidence of cardiac disease, measurements relating to hypercapnia, and physician's assessments of disease severity. Forced expiratory volume in one second (FEV_1), maximum voluntary ventilation, and maximum midexpiratory flow rate were also useful. Less useful were vital capacity (VC), FEV_1/VC ratio, diffusing capacity (D_1), and ratio of residual volume to total lung capacity or nitrogen washout curve. A prominent R wave in Lead V_4R was the most important electrocardiographic finding. Residual volume, total lung capacity, and history of dyspnea were not closely related to survival.

Only two deaths occurred among 31 patients with FEV_1's of 1.15 liters or more and resting pulse rates below 78 per minute. This was a lower mortality than expected for a normal population of the same age. However, there were but three survivors among 26 patients who had FEV_1's below 0.75 liter and pulse rates above 90 per minute.

In simple regressions, change in FEV_1 over two years did not correlate with subsequent survival, apparently because of the tendency of patients with the highest initial FEV_1's, who have an excellent prognosis, to show the greatest decline in FEV_1. When initial FEV_1 was held constant in a multiple regression analysis, changes in FEV_1 over two years added significantly to the prediction of subsequent mortality. Thus, the course of expiratory slowing was a useful guide to prognosis if considered in conjunction with the initial FEV_1 level. The observed rate of change in diffusing capacity was also significantly releated to subsequent survival when initial FEV_1 was held constant.

A multiple regression analysis that took into account observed changes in variables over two years in addition to initial observations indicated that the initial severity of expiratory slowing, the initial heart rate, and the rate of decline of expiratory flow rate were independently useful in prognosis. Consideration of these three features reduced the apparent prognostic value of other observations to insignificant levels.

COURSE OF FINDINGS

Most objective findings showed a systematic worsening with time in surviving patients. The FEV_1 appeared to fall approximately 75 ml per year, and courses of patients were more uniform than expected. At this rate the disease would need to progress for 20 to 30 years before ventilatory impairment became severe enough to

Benjamin Burrows, M.D., and Richard H. Earle, M.D. *The New England Journal of Medicine*, February 20, 1969.

produce clinically significant dyspnea. Once mild chronic dyspnea had developed, the expectation would be progression to severe disability in from six to 10 additional years. These durations are compatible with the clinical histories obtained from patients with the disease and suggest that the disease must begin quite early in life, perhaps even in childhood. An onset of disease in childhood is also suggested by the finding of early emphysematous changes in the lungs of teenagers dying of accidents or trauma.

It appears that the impression that chronic obstructive lung disease is a variable and unpredictable disorder with fluctuating abnormalities is the result of three things: the relatively small yearly changes in pulmonary function tests, the tendency of clinicians to remember exceptional cases, and the optimistic attitude of both patients and physicians.

Prognosis may be simply estimated as having clinical usefulness as follows:

With mild to moderate expiratory slowing (FEV_1 more than 1.15 liters) five-year expectancy is near normal in uncomplicated cases and close to 66 per cent in patients with evidence of cardiac disease or tachycardia at rest.

With moderately severe ventilatory impairment (FEV_1 of 0.75 to 1.15 liters) there is a 66 per cent five-year survival, but this figure is reduced to 33 per cent if evidence of cardiac disease, tachycardia at rest, hypercapnia, or a very low pulmonary diffusing capacity is also present.

With very severe expiratory slowing (FEV_1 less than 0.75 liter) only 33 per cent of patients without complications survive for five years, and five-year survival is unusual if there are any adverse features.

The relation of smoking habits to the course of the disease is difficult to assess. Patients who had stopped smoking before entering the study had a poorer survival than those who continued to smoke cigarettes, but this was related to a tendency of patients to stop smoking when their disease became severe.

THERAPEUTIC IMPLICATIONS

There is a general tendency for the disease to worsen, and this trend becomes increasingly evident as patients are followed for a prolonged period. This generally unfavorable course should not be used to justify a nihilistic attitude toward therapy. There is little doubt that symptomatic relief may be obtained in many patients with severe hypoxemia and cor pulmonale or with recurrent acute exacerbations, but the gradual deterioration of most patients with chronic obstructive lung disease is not prevented by currently available therapy.

Combined Leukemia, Carcinoma, and Hyperplasia of the Prostate

K. R. Guerrier and L. Persky (2065 Adelbert Rd, Cleveland)

Arch Surg 98:365-366 (March) 1969

Involvement of the prostate by lymphomatous disease is an infrequent occurrence. Even rarer is the coexistence of another disease entity. The case of a 70-year-old man with leukemia, benign prostatic hypertrophy, and adenocarcinoma leading to urinary retention is reported and the literature reviewed. Often the prostate diffusely involved with leukemia is almost asymptomatic. If adenomatous hyperplasia is present also, leukemia infiltration is nodular and usually results in urinary retention. The rectal palpation of such a prostate gland reveals findings which correspond to those of benign hypertrophy. Leukemia infiltration of the prostate gland is usually by lymphatic leukemia. The coexistence of all three diseases was unsuspected until histological study of the specimen.

July, 1969

THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 66 No. 2

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Experience With Implanted Pacemakers

O. B. Harrington, M.D.*, V. G. Crosby, M.D.*, J. C. Morrison, M.D.

Heart block is one of the most common disorders of cardiac rhythm. It is probable that heart block is exceeded in frequency only by premature beats, auricular fibrillation and paroxysmal auricular tachycardia. Prolonged A-V conduction time, partial heart block, and complete heart block are encountered in that order of frequency. Recent developments in the electronic components, as well as mode of implantation of cardiac pacemakers have made these units applicable to a wide range of patients with heart block not previously considered suitable candidates.

Physicians have long been fascinated by the electrical properties of the heart. Walshe[1] as early as 1862 suggested that external galvanic stimulation of the myocardium might be of value in the treatment of cardiac arrest. This concept, after a seventy year dormancy, became a reality in the hands of Gould[2] who in 1929 resuscitated a child who had sustained a cardiac arrest. This principle became the subject of wide interest with the advent of open heart surgery. Surgical procedures on the heart occasionally resulted in various degrees of atrioventricular block. To combat this Weirich,[3] et al., developed an extrinsic electronic device to stimulate the myocardium in A-V block. More recently cardiac pacemakers have been used to treat heart block of multiple etiology. Earlier units stimulated the myocardium at a fixed rate. Variable rate synchronous pacemakers triggered by the "P" wave, or the "R" wave impulse may now be used in most cases. Electrodes may be implanted directly into the myocardium or threaded through an accessible peripheral vein establishing endocardial contact in the right ventricle. The implantation of permanent artificial pacemakers for the prevention of Adams-Stokes attacks or ventricular arrhythmias may be easily accomplished to allow patients to return to useful productivity.

It is estimated that twenty-five thousand people are annually afflicted with heart block. The majority of these people are between fifty-five and seventy-five years of age. Symptomatically, atrioventricular block may range from no symptoms to complete disability because of low cardiac output or even a threat to life due to repeated Adams-Stokes attacks. Syncope may result from any alteration in the cardiac mechanism which causes a sudden decrease in cardiac output and consequently a decrease in cerebral blood flow. Heart block may be transient or permanent, partial, or complete.

The differential diagnosis of cardiogenic syncope, simple syncope, carotid sinus syncope, syncope due to aortic stenosis, cerebrovascular insufficiency, and epileptic seizures in the elderly may be difficult. In those patients with a complete atrioventricular block the diagnosis is readily apparent. However, those with transient or intermittent block may have a normal sinus rhythm at the time of examination and thus the diagnosis remain obscure. Evidence of bundle branch block in a patient with syncope is suggestive of Adams-Stokes attacks. Although there are several etiological causes of heart block the majority are the results of arteriosclerotic occlusive disease involving the nutrient artery to the atrioventricular node.

In an effort to re-evaluate our past experience with implantable cardiac pacemakers and to obtain improved results with more sophisticated units, our recent experience has been reviewed.

In our series of twenty-five patients 68% were female. The oldest was ninety-one and the youngest fifty-one. Of these 88% had had Stokes-Adams attacks and 48% had had evidence of congestive heart failure. Myocardial infarction had previously occurred in eight and hypertension was present in five of these twenty-five

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patients. Nine had no previous history of cardiac disease.

Fifteen of our patients had a thoracotomy under general anesthesia with direct implantation of the electrodes into the left ventricular myocardium. In these patients the pulse generator was placed in a subcutaneous pocket in the left upper quadrant of the abdomen, or in the left axilla. Two patients underwent a limited thoracotomy under local anesthesia with implantation of the electrodes into the right ventricular myocardium. In eight patients who received a pervenous electrode via the external jugular or cephalic vein the pulse generator was placed in a subcutaneous pocket in the infraclavicular fossa.

All patients were available for follow-up study extending from one to forty-eight months. Five patients have required replacement of the pulse generator on an elective basis because of evidence of battery failure. Two of these were replaced at three years, and three at thirty months. There have been no complications related to infection, lead breakage, or malfunction of the pulse generator. We now feel that all units should be electively replaced at thirty months.

Surviving patients have all been restored to their normal activities and are asymptomatic. Three deaths have occurred in this series. The first resulted from complications of a perforated gastric ulcer. The second occurred in an eighty-nine-year-old woman who had had a myocardial infarction with complete heart block. A pervenous fixed rate pacemaker had been implanted under local anesthesia and this maintained a satisfactory rate; however, progressive congestive heart failure resulted in death forty-eight hours after implantation. Postmortem examination revealed a massive myocardial infarction which involved the septum. The third death occurred in a sixty-year-old man with intermittent block who had received a fixed rate cardiac pacemaker. He died suddenly, apparently from ventricular fibrillation. This patient had a competitive rhythm and thus stimulation of the myocardium in the vulnerable period may have resulted in ventricular fibrillation.

Twenty-five percent of patients who are permanently paced for third degree heart block return to normal A-V conduction.[4] When this occurs a competitive state is established between depolarization of the ventricles produced by the artificial fixed rate pacemaker and that produced by the patient's own sinus rhythm. It is then inevitable that an electrical stimulus from the fixed rate pacemaker will discharge during the vulnerable period of the cardiac cycle.

It was initially felt that the low amplitude of the impulse from the pacemaker could not induce ventricular fibrillation; however, recent evidence has proved this a false assumption. When competition occurs in the presence of anoxia, acidosis, electrolyte imbalance or myocardial infarction, ventricular tachycardia and fibrillation are even more likely to occur. Increasing concern over competitive rhythm has stimulated the development of synchronous and demand pacemakers.

Fixed rate, as well as variable rate, synchronous, and demand pacemakers were used in this series. Either unit may now be used with myocardial implantable or pervenous electrodes. Fixed rate pacemakers stimulate the myocardium at a regular rate and without regard to any intrinsic electrical activity. These units are probably satisfactory for permanent complete heart block, and are not as expensive as the more sophisticated units. The variable rate pacemaker trigged by the "P" wave sends an impulse to the myocardium in response to each atrial impulse. These units usually have an automatic base rate of sixty and a top rate of one hundred and twenty. Atrial synchronous pacing has the advantage of improved ventricular filling.

Those pacemakers which sense the "R" wave perform a similar function so that if normal conduction is taking place, the pulse generator either sends an impulse synchronously with the "R" wave, or the pulse generator impulse is blocked so that no additional impulse is sent. The electrode is used for the dual purpose of detecting ventricular systole and stimulating the ventricle. A sensing unit is incorporated which will detect an "R" wave above a minimal predetermined magnitude. When the patient's R-R interval is longer than that which is considered safe, the pacemaker is activated and the heart is paced at a fixed rate. Any subsequent R-R interval equivalent to a safe rate results in pacemaker shutdown or stimulation during the QRS portion of the electrical cycle. A pacemaker of this type presents certain distinct advantages. Competition between the patient's intrinsic focus and the pacing unit is prevented. Artificial stimuli will fall only during the QRS portion of

the cardiac cycle and during this time the ventricles are completely refractory.

Surgical implantation may be accomplished either by thoracotomy for direct epicardial implantation of the electrode, or right ventricular endocardial contact may be established through a peripheral vein utilizing the pervenous electrode. The pulse generator is usually implanted in a subcutaneous pocket near the incision used for placement of the electrodes. Anesthesia may be local or general in either instance, local being commonly used for pervenous electrode placement, and general anesthesia being required for formal thoracotomy with myocardial implantation of the electrodes.

In this series eight pervenous demand pacemakers have been implanted without complication. All have established and maintained satisfactory pacing from one year to two years. This excellent experience combined with the obvious advantages of avoiding a formal thoracotomy in the aging patient lead us to believe that permanent transvenous "demand" pacing is the method of choice in most cases of heart block.

Summary

Experience with permanent implantable cardiac pacemakers has been reviewed. Implantable pacemakers capable of sensing the "R" wave so that competitive rhythm does not occur are now available. The pervenous electrode obviates the need for thoracotomy and allows these units to be implanted utilizing only a subcutaneous skin incision under local anesthesia. These developments seem to indicate wider use, as well as improved results, in cardiac pacemaking.

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Blood Trauma Produced by Pump Oxygenators: Comparative Study of Five Different Units

M. N. Anderson and K. Kuchiba (Dept of Surgery, State Univ of New York, Buffalo)

J Thorac Cardiov Surg 57:238-244 (Feb) 1969

Comparative studies of blood trauma produced by four types of disposable bubble oxygenators and by a conventional disk oxygenator were performed. The most useful indices of blood trauma appear to be rates of hemolysis and platelet loss. The lowest average rates of hemolysis were produced by the Temptrol and Travenol U310 oxygenators. The lowest rate of platelet loss was produced by the Temptrol oxygenator and disk oxygenator. Cinematic studies of blood flow in the oxygenating chambers suggest that the rate of hemolysis in bubble oxygenators is related to the degree of "surging" or turbulence within the oxygenating column and is less in oxygenators in which the blood flow proceeds smoothly up the oxygenating column.

Early Detection of *Pseudomonas* Burn Infection

H. C. Polk, Jr., et al (Univ of Miami School of Medicine, Miami, Fla)

Arch Surg 98:292-295 (March) 1969

Bacterial infection with *P aeruginosa* remains a significant threat to the extensively burned man. Such invasion proceeds from the wound surface, and prior studies indicated that proliferation of surface bacteria could be detected prior to invasive sepsis. Observations that the fluorescent pigment, pyoverdin, was more common than the blue-green pyocyanin among pathogenic *Pseudomonas* led to the scanning of clinical burn wounds with Wood's light. Minimal fluorescent concentration is just less than that documented as the minimal invasive concentration for *Pseudomonas*. Regular use of these methods has materially reduced the frequency of invasive sepsis and deaths due to *P aeruginosa* in the burned man.

The Role of the Tuberculosis and Respiratory Disease Association in TB Control

Robert H. Schnee*

Voluntary tuberculosis associations have for more than sixty years pioneered in the development of a better public understanding of tuberculosis and measures for its detection and prevention. They have suggested early case finding and the necessity for isolation of known cases to stop the spread of the disease. Through research and education they have promoted improved medical treatment for tuberculosis. This support and encouragement by the voluntary groups has contributed immeasurably to the remarkable advances in laboratory procedures and in medical and surgical treatment.

We now realize more than ever before that attempts to find persons with tuberculosis, to isolate them, and to provide medical care, are *not by themselves* sufficient to free society from tuberculosis. To be successful our role must be expanded to encompass promotion and support of many community services and facilities. This is especially true today with shorter periods of hospitalization and the advent of new drugs for treatment and chemotherapy. Patients and families need much more than medical treatment to recover from the harmful physical, emotional and social effects of tuberculosis—often precipitated by an employer or fellow employees ignorant of the facts. These needs can only be met through the cooperation of official and voluntary agencies and the medical society. We all recognize such local services as an integral part of comprehensive treatment without which no program of tuberculosis control can be effective. The role of the voluntary TB and RD Association, then, is one of support through education, demonstration and promotion of legislation for those services necessary to restore the tuberculosis victim to the fullest physical, mental, social, vocational, and economic usefulness of which he is capable.

The Association carries out its responsibilities by working closely with all groups interested in the tuberculous, to ascertain gaps existing in present programs, and in developing plans to meet these needs. We must consider that our work begins with diagnosis, continues through treatment to final job placement and readjustment to family and community life.

The TB and RD Association, by planning and action of all its staff and board members, makes efforts to assure that all needed services are available to the tuberculosis patient. Overlapping services should be avoided. While tuberculosis associations should not and cannot themselves finance *all* these services, they have an obligation to point out the *needs* in the official and voluntary agencies' programs for the tuberculous handicapped.

The percentage of a tuberculosis association's budget which is allocated to a particular phase of the total program naturally varies from State to State or county to county, depending on the total amount of funds available and the extent of the local problem. In all areas of the program it is quite necessary that every effort be made to coordinate the work of the voluntary agency and that of the tax-supported agencies involved in working on the particular tuberculosis problem.

Through lack of knowledge and misunderstanding some have leveled criticism at the voluntary TB and RD Associations—as well as other voluntary health agencies—for the "large percentage of income which goes for administration and fund raising." These individuals fail to explain that the expenses for salaries of skilled professional workers covers not only the period of fund raising, which is in itself a highly educational health program, but also for the many other duties performed by these same workers throughout the entire year. Their work constitutes much of the *program* of the Association.

We do not exist just to raise funds, but, of course, find it necessary in order to make our programs possible. Most of the money collected is used locally—only 7% goes to our National organization while the remainder is left in the local communities and Arkansas for local and State-oriented programs.

For several years now your State Association has been engaged in "reorganization." Re-

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organization to many is synonymous with "Centralization" and this creates a climate of criticism in some who are more interested in fighting change than in intelligently considering the advantages in "pooling" of efforts. Our organization is interested in organizing in such a way as to make the full and best use of our resources for the greatest number of people. We will leave this subject with just one question—How long would Arkansas have had to wait for its improved highway system if the funds from all states were not lumped together, then reallocated where needed, to provide an interstate system enjoyed by all? Our consolidation of school districts to provide better facilities and training for our youth is another example. Our organization must—and will—change as our society and the forces within it change. To fail to meet this challenge of change can only result in ineffectiveness and eventual decay.

In considering the various functions of the voluntary TB and RD Associations, we would say the major one is *leadership*. This leadership can best be accomplished by assuring the availability of education—education in the full meaning of the word—education of our physicians, nurses, social workers and other related professions, as well as education of the public to cooperate and take full advantage of the tools and resources available today to eradicate tuberculosis.

At times we find ourselves in the role of "critic," based on a frame of reference gained from collecting data and information from all available sources—voluntary, governmental and professional. However, wisely we think, our leadership seldom airs this criticism through the publicity media—rather, we endeavor to provide a forum or common meeting ground where differences can be impersonally and objectively presented and a cooperative and correlated approach to the problem can be formulated.

Because of our limited budgets our role cannot be one of the beneficent philanthropist who gains a great deal from a gracious "thank you" from an individual recipient. Our funds must be budgeted to do the greatest good for the greatest number. How much more important it is to spend $75.00 toward stimulating official agencies to provide a service state-wide than to spend $75.00 directly on a single patient. There will always be exceptions, but we must change our provincial thinking if we are ever to achieve our goal. Our income would have to be many times its present amount if we were to attempt to provide "Direct Services" to all patients. We must remain constantly aware of the patient's welfare and needs and use our influence in seeing that services are provided—all this while continuing to concentrate on our proper programs of Education, Demonstration, Legislation, Research, and Community Organization.

Nodular Subepidermal Fibrosis

W. C. Black, M. H. McGavran, and P. Graham (Washington Univ School of Medicine, Barnes Hosp Plaza, St. Louis)

Arch Surg 98:296-300 (March) 1969

Nodular subepidermal fibrosis, a benign lesion variously known as dermatofibroma and sclerosing hemangioma, is a relatively common indolent skin lesion, usually presenting as an asymptomatic intradermal mass. A clinicopathological study of over 600 such lesions showed that the majority were removed from adult females, and that the calves, thighs, and upper extremities were areas of predilection. Secondary changes in the epidermis are induced by proliferating dermal fibroblasts and together with accumulations of melanin and hemosiderin may be responsible for erroneous clinical diagnoses of basal or squamous cell carcinoma of melanoma. Other frequent preoperative diagnostic errors included nevi, epidermal cysts, and neurofibromata. Histological features shown by these lesions are quite variable due to differences in vascularity, cellularity, and lipid content. No evidence substantiating a traumatic etiology (reparative process) or hemangiomatous origin was found.

Laboratory Evaluation of Coagulation Disorders*

R. Gene Girkin, M.D.**

The bleeding and clotting times, and clinical history, were for years the only available means of detecting latent bleeding disorders, although it was well known that many potential bleeders were not discovered. The clotting time, whether performed in a capillary tube or a test tube, is not altered in the presence of many serious coagulation defects. Its usefulness is so limited that I believe it should be discarded as a screening procedure. It is adequate for following heparin therapy, and this is probably the only place where the test should be employed today.

The number and variety of diagnostic tests for bleeding disorders have increased at a distressingly rapid rate in recent years. This has led to confusion among many as to which test should be performed in a given situation. The answer obviously depends upon the situation, since the patient's past history of bleeding episodes, medications, family history of "bleeders," physical findings, and previous laboratory data are all helpful in the decision.

In deciding what tests are most appropriate, it may be helpful to separate the mechanism of hemostasis into four areas: disorders of blood vessels, disorders of platelets, disorders of coagulation mechanism, disorders of the fibrinolytic mechanisms. I will briefly discuss tests evaluating each of these areas.

Normal resistance and contractility of blood vessels and an adequate supportive framework for them is essential for hemostasis. The recognition of such defects rests primarily on careful clinical observation. The only laboratory procedures which aid in this problem are the tourniquet test and determination of the bleeding time. Of these, the bleeding time is much more sensitive. Both the Ivy method, which uses the forearm, and the Duke method, which uses the earlobe, have been widely used. Most authorities believe the Ivy method to be more sensitive. However, Armand Quick maintains that the Duke method is the best. Probably either method, if properly performed, is adequate. Perhaps the only occasion in which the tourniquet test is preferable to the bleeding time is in anaphylactoid purpura, where it is usually positive.

Platelets have a variety of functions, and because of these, must be studied and tested in a number of different ways. Platelet disorders may be divided into quantitative and qualitative defects. Quantitative defects are usually evaluated either by a platelet count, or estimation from a blood smear. Bleeding time, clot retraction and tourniquet test have also been used, but really measure both platelet function and numbers. Of these latter tests, the bleeding time is by far the most sensitive in detecing thrombocytopenia.

Other tests of platelet function include measurements of platelet adhesiveness, thromboplastin generation, and prothrombin consumption. Of these tests, the prothrombin consumption test and the thromboplastin generation test are available in most general hospitals, whereas the use of the platelet adhesiveness index is still largely confined to research centers.

The coagulation system is by far the most complex part of the hemostatic mechanism and involves the interaction of numerous factors, as well as regulation of these factors by inhibitors. The coagulation mechanism is usually broken down into the intrinsic and extrinsic pathways. In the intrinsic system, the thromboplastin is formed in the blood, while in the extrinsic system, clotting is initiated by tissue thromboplastin. The partial thromboplastin time measures the clotting in the intrinsic system, while the quick prothrombin time measures the clotting via the extrinsic system. Since factors VIII, IX, and XI occur only in the intrinsic system, a deficiency of these factors cannot be picked up with the prothrombin time. If a coagulation defect is suspected, there is no doubt that the partial thromboplastin time is by far the best single test. This test will be abnormal in more than 90% of patients with coagulation disorders, including those with mild deficiencies. The prothrombin time is somewhat more sensitive in detecting deficiency of factor V, prothrombin, and fibrinogen.

Consumption coagulopathy or defibrination syndrome results from widespread intravascular clotting. The probable course of events is the

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entrance of thromboplastic material into the circulation, with intravascular coagulation; followed by depletion of platelets, fibrinogen, factor V, factor VIII, and prothrombin. In some cases, this is followed by activation of the fibrinolytic system which compounds the problem. This syndrome may occur as a complication of pregnancy and parturition, in many surgical procedures especially using extracorporeal circulation, and with mismatched transfusions.

A more chronic form of the defibrination syndrome is seen in the retention of a dead fetus in utero. About 25% of women who retain a dead fetus longer than one month will develop a potentially dangerous degree of fibrinogen depletion. The fall in fibrinogen is usually slow and progressive, at a rate of 50 mg. per 100 ml. plasma per week, making it important to determine the fibrinogen levels at weekly intervals.

In acute defibrination syndrome, the platelet count, factor V, and factor VIII fall before fibrinogen. Therefore, if defibrination is suspected early in the course of events, a platelet count and prothrombin time should be done. Specific assay of either factor V or factor VIII can also be done, however these assays are not available in many hospitals. The prothrombin time is sensitive to factor V deficiency, can be performed rapidly and reliably, and is less expensive. It is also more likely to be available on an emergency basis.

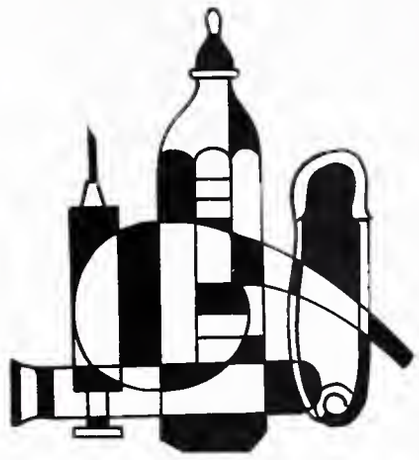
Later in the course of events, you can use: (A) The "FI" test. This is a precipitin test, markedly by Hyland Laboratories. An antifibrinogen antibody is added to the patient's plasma. The formation of a precipitant indicates greater than 100 mg. of fibrinogen. Normal fibrinogen range is from 200 to 400 mg. per cent. It is said that bleeding difficulties are not encountered until the fibrinogen level falls below 100 mg. per cent. (B) Thrombin time (Thrombodex). This measures the rate and quality of fibrin clot formed on addition of thrombin to the patient's plasma. It is consistently prolonged with fibrinogen levels below 100 mg. per cent, and variably prolonged with levels between 100 and 150 mg. per cent. (C) Fibrinogen assay. This is the most definitive procedure, but it is time consuming and therefore is not the procedure of choice in an emergency situation.

As many of you are probably aware, within the last year or two there have been several reports evaluating the use of heparin in these patients. In the reports I have seen, the use of heparin in conjunction with fibrinogen appeared beneficial.

Increased fibrinolytic activity is a fairly frequent occurrence. Fibrinolysis is brought about by a proteolytic enzyme called plasmin. Plasmin levels are controlled by the rate of activation of plasminogen to plasmin. Several tissues have been shown to contain activators of this reaction. Urokinase from prostate is probably the most widely studied. Increased fibrinolytic activity has been demonstrated in a wide variety of disease states, including many types of cancer, and following surgery, particularly involving prostate and lung.

Whole blood clot lysis time, euglobulin lysis time, and fibrin degradation flocculation test, abbreviated FDFT, have been used in evaluating the fibrinolytic mechanism. Of these tests, the euglobulin lysis time appears to be the most sensitive while the fibrin degradation flocculation test is quick and also relatively sensitive. The FDFT therefore is a good test in an emergency. This latter test, however, is not available in many general hospitals at this time.

A battery of screening tests for overall evaluation of a suspected bleeding disorder might include: (1) Partial thromboplastin time, (2) Prothrombin time, (3) Platelet count or observation of blood smear, (4) Bleeding time, (5) Observation of whole blood clot. By using a battery of tests such as this, one can pretty well cover the various areas. The whole blood clot lysis time is a crude test but can yield a great deal of information. If you watch to see if you get good clot formation, you get some idea of the fibrinogen content. Observation for clot retraction gives you some idea of platelet function. Observation for clot lysis gives an indication of the presence of fibrinolysis. From this screening battery, you can then decide what further tests are indicated.



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Cardiovascular Dynamics of Parturition: Clinical Considerations

Richard B. Clark, M.D.*

Profound circulatory changes take place in the pregnant patient. Labor and delivery accentuate these alterations from the normal. A knowledge of these factors is important in the obstetrical, medical, and anesthetic care of the pregnant patient. This is especially true in those suffering from organic heart disease.

Changes in Blood Volume

Blood volume increases in pregnancy.[4, 6, 17, 19, 23] There is a moderate increase in blood volume during the first trimester, a more marked rise during the second trimester, and a slight increase throughout the third trimester.[19] Previous reports of a contraction of the blood volume near term have been refuted.[19] This increase, at term, may vary from 20% to 100%, with an average increase of 48% (1570 cc.). (Table 1) There is a greater increase in women with multiple fetuses, twin pregnancy producing a 51% increase (1960 cc.) over the non-pregnant state.

The increase in blood volume results from a rise in both plasma volume, and red cell volume. The increase in plasma volume exceeds that of the red cell volume, resulting in a slight drop in hematocrit, which, however, should not fall below normal limits.[6]

Hypervolemia of pregnancy is primarily the results of the placental arterio-venous fistula.[19] Aldosterone, estrogen, and progesterone production may also contribute to the hypervolemia. A fetus is not essential for the development of hypervolemia, as blood volume has also been found to be increased in hydatidiform mole.[19]

Increase in blood volume correlates with increase in placental mass, indicating a greater degree of arterio-venous shunting. The greater blood volume in women with multiple fetuses is considered to be due to a correspondingly greater increase in placental mass, over that of the single pregnancy.[23]

Measured blood loss after vaginal delivery of single fetuses averages 505 cc.[19] This was determined both by measuring blood volume before

TABLE 1
BLOOD AND RED CELL VOLUMES IN NORMAL WOMEN LATE IN PREGNANCY AND AGAIN WHEN NOT PREGNANT

	Late Pregnant	Non-pregnant	Increase ml.	Increase %
Single Fetus (50)				
Blood volume	4,820	3,250	1,570	48
RBC volume	1,790	1,355	430	32
Hematocrit	37.0	41.7		
Twins (30)				
Blood volume	5,820	3,865	1,960	51
RBC volume	2,065	1,580	485	31
Hematocrit	35.5	41.0		

From Pritchard, J. A.: *Changes in the Blood Volume During Pregnancy and Delivery*. Anes. 26:394, 1965.

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and after delivery, and by measuring the amount of red cells shed at delivery. This figure is at variance with previous definitions of postpartum hemorrhage. This definition may need modification.[6]

Blood loss during elective repeat cesarean section averages 930 cc. Visual estimates of blood loss at both vaginal and abdominal delivery frequently differ from the actual blood loss; on the average, they are only one-half the amount shed.[19]

Two-fifths of the added volume is lost during delivery and during the next few days.[6] By one week after delivery, the blood volume is only slightly greater than several months later. The diuresis that occurs from the second to fifth days postpartum is presumably one means by which the plasma volume is returned to normal. Any excess circulating hemoglobin above the amount normally present in the pregnant state ultimately yields iron for storage. There is probably a reduction in red cell formation during the late puerperium and postpartum, rather than increased red cell destruction. A similar process follows after a normal non-anemic individual receives transfused cells.[6] The volume of whole blood lost at delivery is counterbalanced by the 500 cubic centimeters (approximately) squeezed into the general circulation by the contracting uterus.

The loss of a considerable quantity of blood at delivery should not result in a lowering of the postpartum hematocrit, unless the amount lost was quite large, or the pregnancy induced hypervolemia was negligible (often seen in toxemia) or both.[19] A loss of 1000 cc. would seem to justify transfusion, rather than the 500 cc. limit set for non-pregnant patients. Pregnant patients can often lose as much as two liters at delivery without showing signs of overt shock.

The hypervolemia induced by pregnancy serves to meet the metabolic demands of the enlarged uterus with its greatly enlarged vascular systems, to protect the mother, and in turn, the fetus against the deleterious effects of impaired venous return and reduced cardiac output when in the supine (supine hypotensive syndrome) and the erect positions. It is also of considerable importance in safeguarding the mother against the adverse effects of hemorrhage during parturition and the early puerperium.

Cardiovascular Changes

In normal pregnancy the arterial blood pressure shows little change. The resting pulse rate and circulation time are moderately increased. Central venous pressure remains unchanged, but the femoral venous pressure rises markedly, approaching 20-24 cm. water pressure at term. This is due to obstruction of the inferior vena cava and pelvic veins by the enlarged uterus and is relieved by delivery, or by turning the patient to the lateral position.[13] Both central and femoral venous pressure rise during effective uterine contractions.[4]

Cardiac output during pregnancy is approximately 11% greater than in the non-pregnant state.[17] Uterine contractions produce a further rise of 20%,[17] or more.[22] The diseased heart may fail to meet these increased demands; the times of maximum cardiac output are at 28-32 weeks, during labor, and immediately postpartum. Cardiac output does not increase progressively during pregnancy, but decreases in the weeks before delivery. This is apparently due to placental aging, and a decrease in arterio-venous shunting, as the blood volume continues to increase even to term.[2] If a cardiac patient can tolerate the 28th to the 32nd week of pregnancy, she should be able to carry the fetus to term.

Increased cardiac output during labor is due to squeezing of uterine blood into the general circulation during contractions, anxiety, and by skeletal muscular activity by the patient. Increase in cardiac output during labor can be greatly reduced by the use of regional anesthesia, which removes the apprehension, pain and activity of the parturient.[16] Relief of the inferior vena cava obstruction, and loss of the uteroplacental circulation at delivery tends to increase cardiac output.[14] Venous return is increased, as there is no longer vena caval obstruction, and decrease in uterine blood flow makes more blood available to the general circulation.

Left ventricular work increases during pregnancy; this rise is reflected by the increase in cardiac output, as there is no significant increase in left atrial pressure.[2] Adams and Alexander found an increase in left ventricular work during labor, rising from 9.02 kg. meters/min. to 11.79 kg. meters/min. with contractions.[1]

Total peripheral resistance falls during pregnangy, from a normal of 1240 dyne sec. cm.$^{-5}$ to 980 dyne sec. cm.$^{-5}$ This must be so, if cardiac output increases, and there is no increase in

blood pressure.[2] Total peripheral resistance returns toward normal near term, indicative of a decrease in the placental AV shunt.

Cardiac output is best maintained between minimal needs for tissue perfusion and organ functioning, on the one hand, and a limit above which the heart may fail. Both dangers are evident in the pregnant cardiac. Hypotension and syncope can occur from the supine hypotensive syndrome, and failure can result from the inability of a diseased heart to keep up with extraordinary demands.

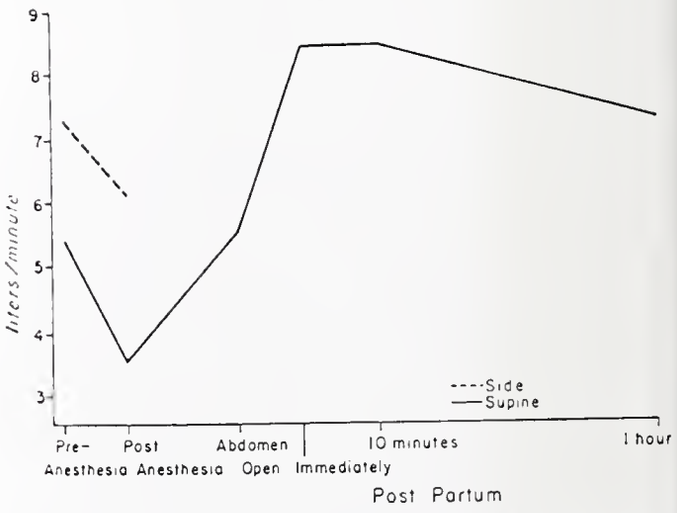
The Effect of Anesthesia on Cardiovascular Dynamics

In deeper planes, general anesthetics produce a fall in cardiac output, a decrease in peripheral resistance and a fall in blood pressure. Nitrous oxide and ethylene are excepted, as they are not potent anesthetics. Cyclopropane initially produces a rise in cardiac output by increasing contractile force, but eventually cardiac output falls if deeper planes are reached.[9] Halothane and methoxyflurane both easily produce hypotension because of decreases in cardiac output and peripheral resistance. Thiopental also results in cardiovascular depression, if given in a significant quantity. An initial intravenous dose of 100-200 mg. has minimal effect, and this forms the basis of the thiopental—N_2O-O_2—succinylcholine technique of general anesthesia, which has very little cardiovascular effect, provided minimal thiopental is used.

The thiopental—N_2O-O_2—succinylcholine technique has been utilized for cesarean section, and cardiac output, just after induction was found to be within the normal range for late pregnancy.[14] Of the patients studied, half had no appreciable change in cardiac output at delivery, and the other half had increases of 12 to 38%. Blood pressure remained constant in the majority of cases.[14] Thus, light general anesthesia seems to be particularly kind to the circulation during cesarean section.

Regional anesthesia has no effect on the myocardium directly, unless toxic amounts of local anesthetics are used, but may decrease cardiac output via autonomic blockade, decreasing venous return and lowering peripheral resistance. Low spinal anesthesia probably has little effect on cardiac output, but higher spinal anesthesia, i.e., for cesarean section,[20] frequently accentuates the supine hypotensive syndrome, resulting in hypotension and a fall in cardiac output. This fall can be followed by a considerable overshift at delivery, with cardiac output reportedly rising 52%, heart rate rising 11%, and stroke volume rising 67% at abdominal delivery under spinal anesthesia[20] (Figure 1). Peridural anesthesia to the mid-abdomen in vaginal delivery was more benign, as these patients did not show a change in cardiac output until after delivery, at which time it increased.[10] Cardiac output rises during labor and delivery with no anesthesia[10] or "local" (paracervical) anesthesia.[22]

Figure 1.



Cardiac Output During Cesarean Section With Spinal Anesthesia. From Ueland, K., Gills, R. E., and Hansen, J. M.: *Maternal Cardiovascular Dynamics. 1. Cesarean Section Under Sub-Arachnoid Block Anesthesia.* Amer. J. Obstet. Gynec. 100:47, 1968.

Choice of Anesthesia in the Pregnant Cardiac

We now come to an area of discussion which initiated this review—choice of anesthesia in the pregnant cardiac patient. From the foregoing, it is apparent that anesthetic techniques or agents which result in significant increase or decrease in cardiac output are to be avoided. Flowers, in his textbook of obstetrical anesthesia,[7] recommends peridural anesthesia for vaginal delivery in heart disease, or paracervical-pudendal block. In cesarean section, he recommends lumbar peridural, local, or thiopental—N_2O-O_2—succinylcholine or "regional" anesthesia. He does not say whether this should be peridural or spinal.

There seems to be general agreement that peridural anesthesia (either caudal or lumbar epidural) is best for vaginal delivery of the pregnant cardiac. There is much less certainty regarding choice for cesarean section. I know of no studies directly comparing spinal and general anesthesia for section in the cardiac patient, in regard to mortality, morbidity, infant condition,

and cardiovascular dynamics. On the basis of the work of Ueland[20] and Lees[14] and others it would seem that the best choice for section might be thiopental—N_2O-O_2—succinylcholine, with peridural, spinal and local following, in that order.

Care of the Pregnant Cardiac

There are four chief considerations.[6] (Classes I & II): (1) Adequate rest during pregnancy, (2) avoidance of infection, (3) recognition of early signs of heart failure, (4) care during labor. The last involves hospitalization a week or two before labor, possible digitalization, and the semi-recumbent position during labor. Analgesia early in labor can be achieved with small doses of narcotics and tranquilizers. When active labor is firmly established, peridural is instituted, with special care being taken to prevent high levels of anesthesia, and possible hypotension. Elective low forceps permit shortening of the second stage and prevent possible expulsive movements. After delivery, it has been recommended that the peridural catheter be left in place and anesthesia continued for 25 hours to reduce the postpartum increase in cardiac output.[17] Also suggested is compression of the inferior vena cava through the abdomen with sandbags.

Cardiac patients should undergo cesarean section only for obstetric reasons. Fortunately, most cardiac patients have relatively easy vaginal deliveries. Vaginal delivery is far safer than cesarean section. Abundant evidence shows that these sick women withstand major surgery poorly and the heart disease itself is never an indication for cesarean section.[6] Maternal mortality is higher in cardiac patients delivered by section than per vagina.[11] The choice of anesthesia for section seems to be thiopental—N_2O-O_2—succinylcholine.

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SURGERY at the UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE*

*Under the direction of Gilbert Campbell, M.D., Professor of Surgery.

Management of Burn Wounds

Fred T. Caldwell, Jr., M.D.*

It has been established beyond reasonable doubt that bacterial colonization of burn wounds and the resulting local and systemic bacterial invasion is the most frequent cause of death in patients with thermal injury. Furthermore, it has been established, both experimentally and clinically, that the frequency of fatal sepsis following burning can be reduced by using topical agents which are bacteriostatic and/or bacteriocidal.

The two treatment methods which have been shown to lower the mortality rate incident to large burns are the technique with silver nitrate proposed by Monafo and Moyer[3] and the use of sulfamylon as practiced by Moncrief, et al.[4] The clinical results with these methods are dramatic and uncontestable. Any disagreement regarding which of the two methods is the better is unimportant, as, properly used, they give comparable results. The important point is that it is difficult to justify not using topical therapy on any burn covering more than 30% of the body surface area.

Silver nitrate produces difficult stains and must be applied to the dressing every four hours. Further, it is difficult to maintain a high enough silver concentration at the wound surface to be effective against the gram negative organisms. Finally, the use of silver nitrate results in depletion of body salts and in methemaglobinemia, which may complicate patient management severely. To retain the efficacy of the silver and obviate the above problems, Margraff and Butcher[2] have proposed the use of silver lactate.

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At the University of Arkansas Medical Center we have obtained the formula for the compound and directions for making silver lactate. The Formulary Pharmacy of the Medical Center has prepared the silver lactate for the Surgery Department, and for some months we have used topical silver lactate in the treatment of all burns. This paper describes our present form of wound management.

Management of the wound begins in the emergency room or on the ward. The burn wounds are cleared of debris, and all blister material is excised. The wounds are then irrigated with saline. No soap or other strong agent is applied to the wound. Silver lactate cream which is an odorless, white, water-base ointment containing .97% silver, is then applied evenly to all wounds with the gloved hand. This cream is held in place by lightly wrapping the wound with kling or kerlex gauze. The hands, when burned, are given more support with splinting to maintain positions of function. All burned areas of the body are treated in this way.

Daily thereafter the dressings are changed, the old silver lactate removed, and the wounds debrided to tolerance without bleeding. During the first two post-burn weeks, no tub soaks are used. The dressing must be changed at least once daily. If there is rapid change in the wound or in the culture reports, dressing changes may be required twice daily. Cultures of the wounds are done at least three times weekly, more often when indicated by changes in the wounds, such as drainage, odor, or pain. Usually the patients are comfortable while the dressings are intact

and will ambulate and feed themselves. In general, they have no trouble maintaining a good nutritional state. Most patients treated in this way in our hospital run a low grade fever (rarely more than 38° C.), but a spike in rectal temperature or temperature elevation chronically higher than 38° C. is looked upon as secondary to wound, pulmonary, or urinary infection, and a solution is sought. Patients so treated may be ready for grafting without ever having been anesthetized for a dressing change. The fasting and limited fluid intake associated with anesthesia are avoided. When areas of the wound are ready for grafting, this is frequently done using local anesthesia and a dermatome made from a safety razor as described by Shoul.[5] Small burns may be entirely covered without the need for anesthesia and its attendant risks and need for fasting. Small squares of skin may be made to cover areas far greater than usual by using the Mesh technique described by Tanner.[6] The functional and cosmetic results of this form of grafting are such that it should not be used on the face, neck, hands, elbows, and knees—that is, places where function and appearance are critical.

Patients treated by this method have a good appetite, taking in 2500 to 3000Kcal per day. They are placed in warm rooms, 84° to 86° F., and are lightly covered with dry bedding. Loss in body weight does occur, but in the majority of patients equilibrium is reached after the first two weeks. As the wounds heal and/or are grafted, the patients begin to gain weight. Chronic anemia and hypoproteinemia are rare without burn wound sepsis. The picture of inanition and cachexia so often seen five years ago in patients with large burns does not occur.

The reasons are simple. Energy requirements attending burning can be controlled by using a warm environment,[1] and patients without sepsis and frequent lasts are capable of taking in enough calories to maintain body mass.

All these methods require more, not less, time for proper management of the burned patient. We feel that this can best be handled by forming burn units where people with special training in nursing and other paramedical skills can aid in the treatment routine.

The problem of rehabilitation of the severely burned patient is a complex one. Actually a team including plastic, orthopedic, and general surgeons, rehabilitation personnel, psychologists and/or psychiatrists, social workers, etc., is needed to achieve the goal of rehabilitation with the severely burned. The goal should be a living, fully functional patient in every case.

The treatment of the severely burned patient has changed more in the past ten years than in the preceding one hundred years. Only one thing is certain: now that old shibboleths have been cast aside, the treatment will continue to change, and those who treat the severely burned must be ready to change.

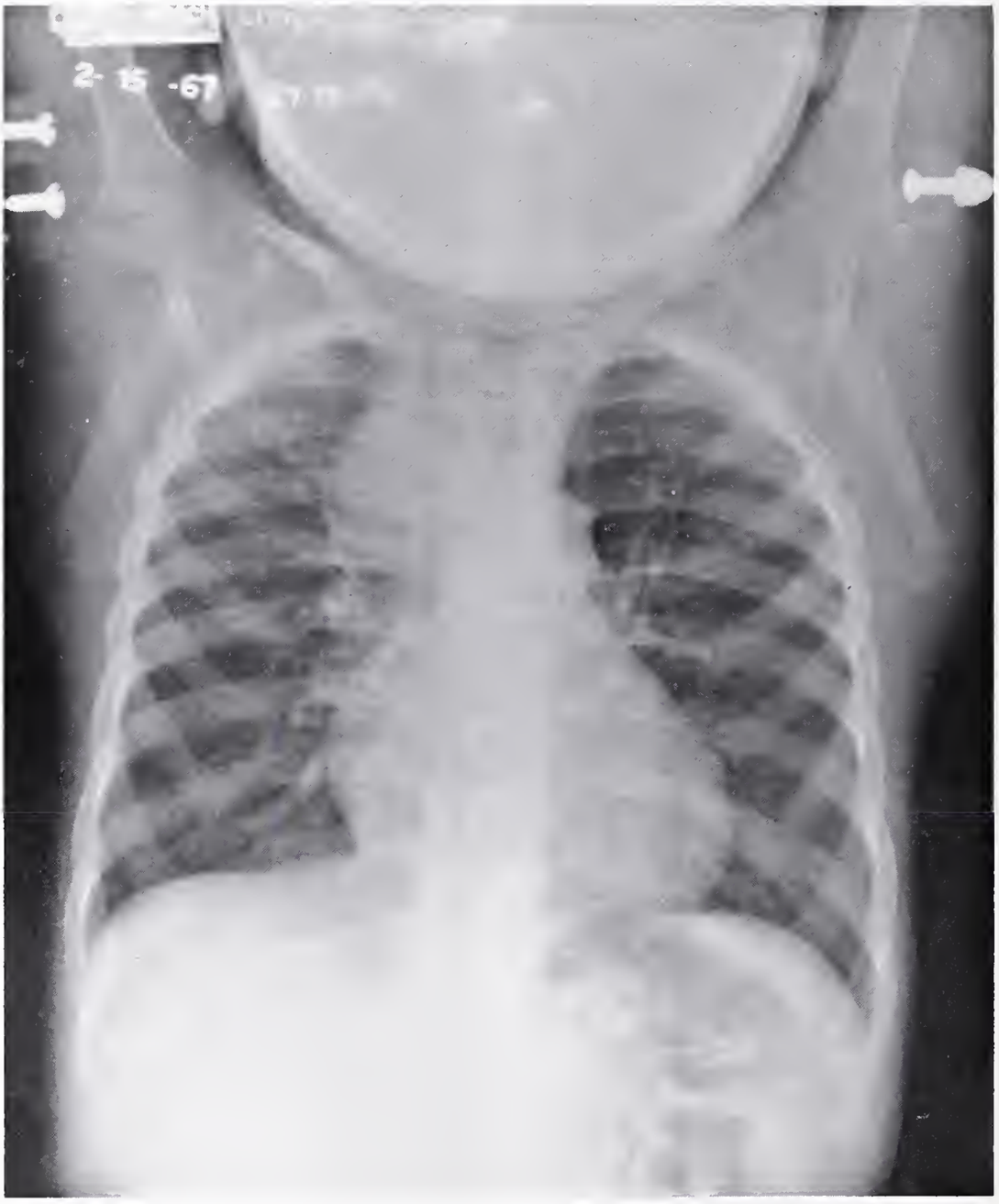
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WHAT IS YOUR DIAGNOSIS?

Prepared by the
Department of Radiology, University of Arkansas
School of Medicine, Little Rock

See Answer on Page 83



HISTORY: Asymptomatic 6-year-old.

ELECTROCARDIOGRAM OF THE MONTH

AGE: 62 SEX: Male BUILD: Slender BLOOD PRESSURE: 248/110

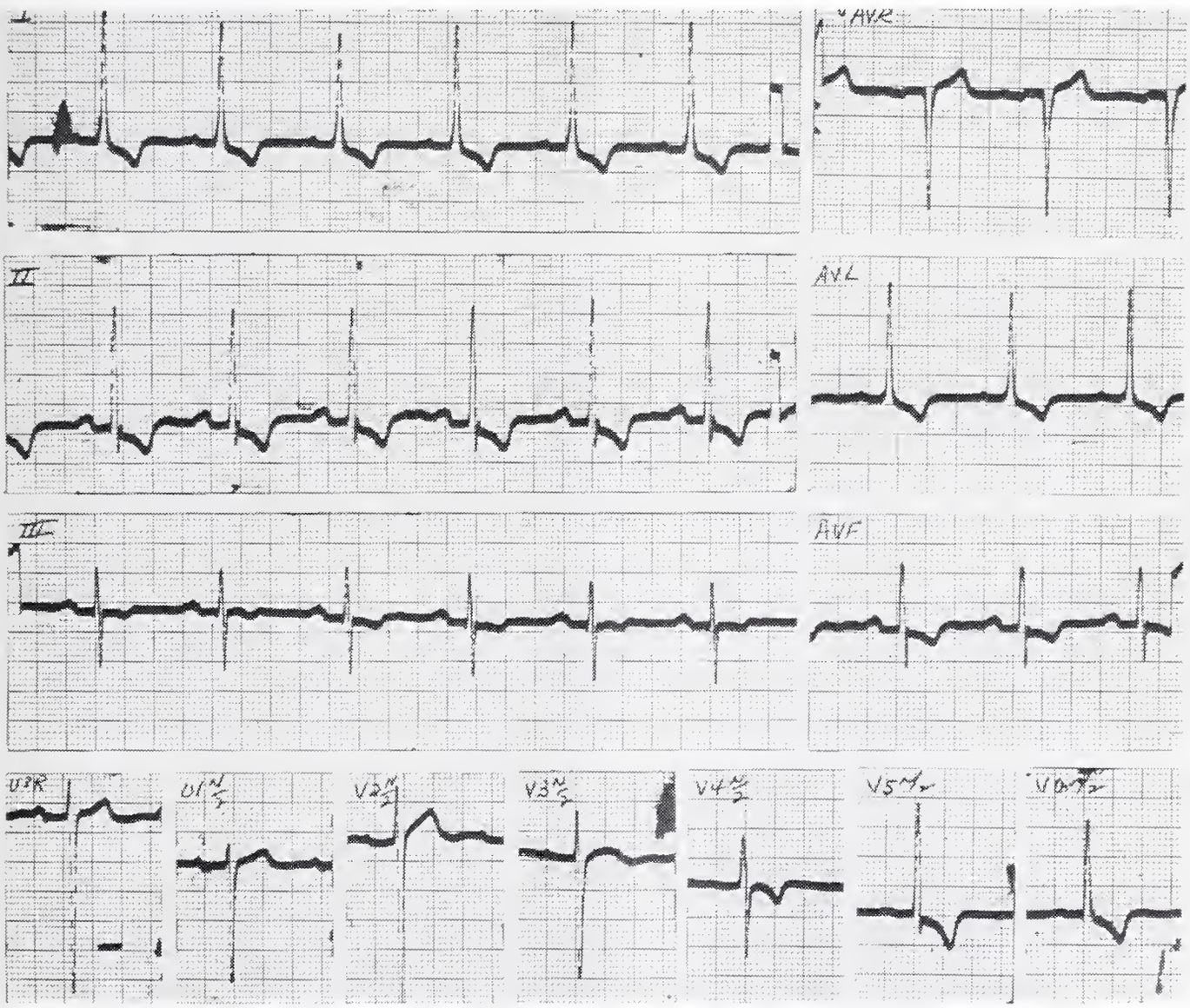
CARDIAC DIAGNOSIS: Hypertensive cardiovascular disease.

OTHER DIAGNOSES: None

MEDICATION: Digitalis; amount not stated.

HISTORY: Suggests angina.

See Answer on Page 83



The Department of Medicine, University of Arkansas Medical Center
James S. Taylor, M.D., Professor of Medicine



Solutions to the Ambulance Service Problem For Small Communities

As in most communities, large and small, the ambulance service was provided by the local funeral home. However, when the Minimum Wage Law went into effect many funeral homes indicated that it would be necessary for them to discontinue that service for economic reasons. The problem of ambulance service became a matter of deep concern to all citizens.

Many counties or cities are not in a position to take the responsibility alone. The best local solution may lie in the area of operation in connection with the hospital, cooperating with county or city, or both.

The three plans presented involve two cars.

Plan No. 1 involves the hospital and some other agency such as the Police Department, Fire Department, County Department, or joint organization of two or three. The two cars would be assigned to separate agencies and the service would be divided into emergency and transfer calls. The Hospital would handle the Transfer Vehicle and the other agency would handle the Emergency Vehicle, and make all emergency calls. Each agency would do their own billing, collecting, and maintenance of their respective vehicle.

Plan No. 1

The Fire Department, Police Department, or some other emergency agency would handle and maintain Emergency Vehicle. They would make all emergency calls.

The Hospital would handle and maintain the Transfer Vehicle. This would involve handling all routine calls, such as transferring patients from home to hospital and to other hospitals for further treatment.

Each agency would be responsible for maintaining and operating their respective vehicles.

In both Plans No. 1 and No. 2, the cars would be dispatched by radio. There would also be a supplement to Plan No. 1 and No. 2. The Hospital could do all the billing and collecting through the business office and charge a fee of cost for this service. If both agencies are operating at a loss, they were to be subsidized by the City, County, and Hospital equally.

Plan No. 2 involved the Hospital and some other agency such as Police Department, Fire Department, County Department, or joint organization of two or three. The two cars would be assigned to separate agencies and the service would be divided into emergency and transfer calls. The Hospital would handle the Transfer Vehicle and make all transfer calls. Each agency would do their own billing, collecting, and maintenance of their respective vehicles.

Plan No. 2

This plan is the same pattern as Plan No. 1, but the program is reversed in that the Hospital would handle the Emergency Vehicle and make all emergency calls, and that the other city or county agency would make the transfer calls from home to hospital, and to medical centers in other cities.

Supplement to Plans No. 1 and No. 2

(1) Hospital will do all billing and collecting for both agencies and a fee will be charged.
   (A) This fee will be *cost*
(2) If both agencies are operating at a loss or either, they will be subsidized from City, County, and Hospital *equally*.

Plan No. 3

Plan No. 3 called for both cars to be stationed together and operated from one location. This could be a corporation, or a charitable trust arrangement. The one agency would operate both cars. Both cars along with sleeping facilities would be at one location, either on city or

county property. Six men would be employed to operate this service and provide twenty-four hour coverage. These men would be driver-attendants. The Board of Trustees would be appointed by the City, County, and Hospital. The department would be under cost accounting. The Hospital could do the billing and collecting and charge the Trust a fee of cost. The agency would be audited monthly and annually. If a deficit should occur in its operation, the three agencies, City, County, and Hospital, would share equally in making up the deficit.

If based at the Hospital, the Board of Control could act as the Board of Trustees for the service. The Hospital Administrator would be the agent of the Trustees and oversee the service. The men would be employed part-time at the Hospital and would handle the Ambulance Service. The Hospital would do the billing and collecting and charge the Trust a fee of cost.

Supplement to Plan No. 3

(1) If Based at Hospital:
- (A) Board of Control Act as Trustees
- (B) Hospital Administrator Could Be Agent for Board
- (C) Employment Part-Time at Hospital
- (D) Trust Pay Balance
- (E) Hospital Do Billing and Collecting
  - (1) Cost Charged to Trust

The Latimer County (Oklahoma) General Hospital adopted this plan. The only difference being that it is a department of the Hospital and not a separate corporation or trust. The Hospital advanced the department operating capital until its first audit was available. The two ambulances used in this plan were donated to the County by the local funeral home.

It was the feeling of the three agencies that the program would work better if wholly based at the Hospital. With the approval of the Board of Control, this supplemental plan was accepted as a department of the Hospital and not a Trust Corporation.

To prevent any minor or undesirable person from putting red lights on his car and calling it an emergency vehicle, the City Council passed an ordinance spelling out the requirements that an ambulance and its driver must meet.

Ambulance drivers should notify the Sheriff's Department, City or State Police upon receiving an emergency call, giving location of the call and what time it was received. When making this report to the proper authorities, the driver is to be sure to give the nature of the emergency when possible.

With the inauguration of Plan No. 3 at the Latimer County General Hospital, Wilburton, Oklahoma, six men were employed as called for in the plan. These men were put on shifts that would coincide with the nursing shifts at the Hospital, thus avoiding having to provide quarters for the men. These shifts were as follows: 7:00 a.m. to 3:00 p.m.; 3:00 p.m. to 11:00 p.m. and 11:00 p.m. to 7:00 a.m.

Two men were assigned to each shift. When either of these two men have time off, other men employed at the Hospital as janitors and maintenance men will serve in his place as an attendant and not as a driver. Personnel at the local funeral home agreed to help as volunteers when needed.

The men employed as drivers and attendants work eight hours a day. The number of men employed affords all men an opportunity to get their days off and take their holidays and vacation time.

The men were required to take First Aid Training furnished by the Hospital. Three courses were taught. First Aid Courses 1 and 2 of the Red Cross, and a course sponsored by the Oklahoma State Health Department.

The orientation of each employee was necessary in many ways. First, to start the drivers to thinking about who was to cover the calls at the Hospital when they were making a transfer call. With two men on duty, one had to stay at the Hospital. When one man was off, there had to be men on call to cover the emergency calls that might come in while they were not available. This had to be a program co-ordinated between the drivers that were on duty and also the drivers that were on their days off. The names of the drivers on call are posted at the nurse's desk at all times.

Even though the drivers leave the Hospital to operate or function as ambulance drivers or attendants, his pay continues on an hourly basis of $1.50 at the Hospital and is paid on a per-call-plus-mileage basis by the Ambulance Service. Both rates are charged to the Ambulance Service as cost for the operation of this service.

Drivers are paid at the rate of two dollars a call for in town transfer calls. The rate for in town emergency calls is three dollars per call. For a transfer call outside the city limits, the rate is two dollars plus ten cents a mile one way.

The rate for out of city emergency calls is three dollars plus fifteen cents per mile one way.

Charges for ambulance calls are ten dollars for transfer calls inside the city limits. Emergency calls inside city limits is fifteen dollars per call. Outside the city limits charges are based at the transfer fee of ten dollars plus fifty cents per mile one way. The emergency call charge is based on the emergency fee of fifteen dollars plus one dollar per mile one way.

Tickets are made by the driver in triplicate. The original is given to the Hospital Business Office for billing purposes, one copy is kept with the car, and the third copy is given to the patient or member of the patient's family. All information is obtained from the patient or member of his family as to whether the patient has insurance, Medicare, Welfare, or private pay. All patient information connected with either category is obtained by the driver. This is transferred to the Hospital Business Office for processing.

Operation expense is audited monthly and charged to the three agencies. If there is a deficit, the Ambulance Service is reimbursed by the County, City and Hospital equally. The time involved by the secretaries in the Business Office is charged to the Ambulance Service as expense and is figured into the reimbursement.

Cytodiagnostic Investigations of Prostate by Transrectal Aspiration Biopsy

K. Bachmann (Medizinische Klinik des Bürgerspitals, Solothurn, Switzerland)

Schweiz Med Wschr 99:291-298 (March 1) 1969

Transrectal needle biopsy of the prostate for cytological examination was performed in 200 patients, none of whom had been hospitalized for primary prostate disease. The Franzen aspiration technique was employed, using a fine needle (length 22 cm, 0.6 mm diameter) connected to a syringe. Time required never exceeded a few minutes, anesthesia was unnecessary, and no complications occurred. The smears were stained by the method of May-Grünwald-Giemsa. Carcinoma of the prostate was diagnosed in 16 patients (8%). In 35 cases comparison between the cytological and histological examination was possible; the two methods proved to be of equal value.

Clinical Radiographic Correlations in Cervical Spondylosis

H. A. Wilkinson, M. L. LeMay, and E. J. Ferris (Boston City Hosp, Boston)

J Neurosurg 30:213-218 (March) 1969

Radiographic findings in 54 patients with clinical cervical spondylosis were reviewed to study the clinical significance of changes on plain x-rays and myelograms. Transverse bars on myelography correlated almost perfectly with posterior interbody spurs on plain x-rays. Diminished sagittal spinal canal diameter occurred as one dimension of a generalized decrease in canal size affecting both sagittal and transverse diameters. No reliable correlation was found between cord widening on myelography and size of posterior interbody spurs or with severity of transverse bars. The data support the concept of a mechanically compressive etiology of the myelopathy of cervical spondylosis.



EDITORIAL

"LOW BACK PAIN — AN APOLOGIA"

Alfred Kahn, Jr., M.D.

It ill behooves an internist to speculate about back pain. The current medical literature in America seems to have turned from ruminative articles to the stereotype of "just presenting the facts." Perhaps more interpretative papers would be desirable, but there is one important facet that should not be overlooked, namely, if the article is speculative it should be clearly labeled. With this apologia in mind, look at the problem of low back pain.

Low back pain usually begins in the middle years of life and often without important antecedent trauma. If one looks at the skeletal system as the most logical cause, then one is entitled to ask why do not very young people get low back pain. Their backs are subject to much more violent exertion and trauma. Rarely is there serious pain in the low back in "teenagers." Do the ligamentous structures wear out so remarkably in the 20 years from 15 years to 35 years? This is most unlikely considering the good state of preservation of ligamentous structures outside the back. No important bony changes are noted in most backs, unless there is a congenital anomaly, in the younger middle age population. Perhaps there is some loss of muscle strength in the 30's and 40's, and considering the sedentary life of many Americans this may be of some importance when scrutinized statistically. Yet, many laborers, at least one recent heavyweight boxing champion, and at least one recent contender for the heavyweight boxing crown have had disabling low back pain.

In the context of looking for skeletal causes for low back pain, one inevitably gets to the ubiquitous intervertebral disc. If one concedes that the disc flattens or physically alters, then one is still faced with the problem of "why." Again, it seems unlikely that repetitive physical trauma is the principal cause since the age group of greatest activity has so few disc problems. Discopathy, falling hair, hemorrhoids, diverticulosis of the colon, and some of the endocrinopathies tend to appear in the same age group —together with other unlisted disorders. Is there a common denominator for these maladies? Take the matter of discopathy and hemorrhoids, does disc degeneration occur because there is thrombosis of the venous blood supply or a decrease in the arterial blood supply? Gram negative bacilli which abound in the gastrointestinal tract could readily reach the disc through the vertebral and paravertebral venous plexus; these bacteria in the blood stream can initiate important thrombotic disorders; can they do this in the blood supply of a disc? Is it possible acute low back pain represents an infection in the disc or nearby tissues. Bacteria and viruses migrating from the urinary tract or colon might initiate an inflammatory reaction, and in this regard, are there any bacteria that show a preference for invasion of disc tissue or is the disc a point of lowered resistance due to poor blood supply, chemical structure, etc.? The herniated nucleus pulposus can be demonstrated at surgery, but there is a whole spectrum of discopathies and they may be different entities rather than graduations of the protusion-herniation syndromes.

Back pain may, of course, mirror localized internal disease. Mid and low back pain are often seen with penetrating duodenal ulcers. Diverticulitis of the colon may be heralded by back pain. Urinary tract infections are associated with back pain in the lay mind, and there is much medical evidence that this is true. The prostate gland refers pain to the low back. Cancer of the colon and diverse malignancies frequently have "the low back pain syndrome."

There are some generalized disorders with low back manifestations. For example, tuberculosis and brucellosis often produce radiologically visible damage to the spine. Endocrinopathies particularly those which decalcify as hyperthyroidism and hyperparathyroidism are prone to give achy low back pain; radiologic proof of the etiology is not always found. Other generalized diseases may manifest themselves by back pain as gout, rheumatoid disease, etc.

The treatment of low back pain is to treat the cause. However, as noted above, the cause of primary skeletal disorders producing back pain is often obscure. The current vogue of therapeutic exercises is probably quite worthwhile if the pain is due to muscle strain from improper posture or if development of the abdominal muscles will open the disc space. Since some of the low back pains do not reflect muscle imbalance, etc., it stands to reason that therapeutic exercises will fail in these patients. The patient who does not respond to exercises and who does not have an obviously protruded disc is likely to be an intermittent invalid for a number of years, and since there are a large number of these cases more research in this area is badly needed.

Studies on Stored Liquid Whole Blood: II. Use of Packed Red Cells

C. E. Shields (Army Medical Research Lab, Fort Knox, Ky)

Transfusion 9:1-4 (Jan-Feb) 1969

Whole blood was collected in ACD and stored with or without plasma. Comparisons were made using various tests, with post-transfusion survival in vivo being the primary guideline. The adverse effects resulting from storage appeared more slowly in units with plasma than in units without plasma. The inclusion of adenine to either packed or nonpacked units was associated with even less evidence of storage damage. All tested groups had average values exceeding 70% recovery after 21 days of storage. Blood stored for 28 days with adenine had over 70% recovery with or without plasma. The average survival value suggests that the packed units were still useful after 21 days of storage, with extension to 28 days when ACD with adenine was used.

Importance of Removing Osteophytes as Part of Surgical Treatment of Myeloradiculopathy in Cervical Spondylosis

J. A. Epstein et al (Long Island Jewish Hosp, New Hyde Park, NY)

J Neurosurg 30:219-226 (March) 1969

Twenty patients with cervical spondylotic myeloradiculopathy, operated on by the conventional methods of laminectomy and foraminotomy, were compared to a group of 37 patients in whom the ventral osteophytes from the vertebral margins were also excised. Improvement occurred in 90% of the patients in the latter group, compared to 50% in the former group. There was no increase in morbidity, and mortality fell from 10% to zero. Adequate circumferential decompression of the entire involved spinal canal by means of laminectomy, foraminotomy, and excision of osteophytes is possible only through a posterior approach.

MEDICINE IN THE NEWS

U. S. Department of Agriculture studies indicate that calcium with its high daily requirement is one of the nutrients most often deficient in American diets.

Mead Johnson Laboratories has announced a new product, SPAR-CAL, which makes calcium—and the Vitamin D necessary for its absorption and utilization—available in a pleasant-tasting form.

The orange-flavored, effervescent tablet dissolves quickly in six ounces of water and provides 500 mg. of elemental calcium (66% of MDR) and 200 USP units of Vitamin D.

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Individually-wrapped tablets come in packages of 30.



PERSONAL AND NEWS ITEMS

Physicians Presented Awards

Dr. Robert Watson and Dr. Henry Hollenberg, both of Little Rock, were presented distinguished service awards at 1969 commencement exercises in recognition of their service and leadership as voluntary faculty members who serve without pay at the University of Arkansas School of Medicine.

Physicians Named Fellows

The following physicians were elected to Fellowships in the American Academy of Pediatrics at its spring meeting in Boston, Massachusetts: Dr. Margaret A. Harrison and Dr. Ronald L. Baldwin, both of Magnolia; Dr. Gilbert A. Buchanan, Dr. Kelsy J. Caplinger, both of Little Rock; and Dr. Bob Gosser of North Little Rock.

Dr. Massey Attends Symposium

Dr. L. D. Massey of Osceola attended the "Symposium on Cardiovascular Disease at the Baylor Medical School, Houston, Texas, on May 22nd and 23rd. Dr. Massey is serving a two-year term as Chief-of-Staff of the Osceola Memorial Hospital.

Medical Firm Formed by Physicians

Dr. John A. Rollow and Dr. Don L. Cohagan of Bentonville recently incorporated as the Bentonville Medical Clinic, Inc.

Dr. Thicksten Attends Meeting

Dr. Jack N. Thicksten of Alma recently attended the 40th Annual Aerospace Medical Association meeting in San Francisco.

Dr. Joseph Norton Elected

Dr. Joseph Norton of Little Rock was recently elected as one of the Pulaski County chairmen in the University of Arkansas statewide Valedictory Scholarship Campaign.

Dr. David Appointed

Dr. Neylon C. David, Jr., of Brinkley has been appointed by Governor Rockefeller to the Arkansas Aeronautics Commission.

Physicians Re-elected to AAGP Membership

Dr. Billy Joe Puckett, Siloan Springs; Dr. Harry M. White, Rogers; and Dr. Douglas H. Lowrey, Russellville, have been re-elected to active membership in the American Academy of General Practice.

Dr. Frankum Certified

Dr. Jerry M. Frankum, Jr., of Newport has been certified as "Specialist in Surgery" by the American Board of Surgery. Dr. Frankum is to be listed in Marquis Who's Who, a directory of medical specialists.

Dr. DePalma Completes Active Duty

Dr. Anthony T. DePalma of Fayetteville, a member of the U. S. Army Reserve, recently completed two weeks of active duty at the Naval Medical School, National Naval Medical Center, Bethesda, Maryland. The course entitled "Geographic Medicine for the Armed Forces" was held March 10-21. Dr. DePalma's rank in the Medical Corps is Lieutenant Colonel.

Physicians' Offices Ransacked

Thieves broke into the DeQueen Clinic recently and among the offices ransacked were Dr. Charles N. Jones' and Dr. Eugene Joseph's. A safe containing approximately $600 was taken from the clinic.

Dr. Stevens Assigned to Arsenal

Captain William M. Stevens, Jr., who formerly practiced medicine in El Dorado, has been appointed assistant post surgeon at the Pine Bluff Arsenal. Dr. Stevens entered military service in August 1967.

Dr. Ramsay Installed

Dr. Rex C. Ramsay, Jr., of Little Rock, was installed in May as president of the Arkansas Public Health Association.

Flying Physicians of Polk County

What may be the only 100% "airborne" Medical Society in the United States is in Polk County, Arkansas. All five physicians (ages from 36 to 71) in the county are active pilots. Polk County is near the Western border of the State in the Ouachita Mountains, about halfway between Fort Smith and Texarkana. The county population is approximately 13,000. The principal town is Mena with 4,388 people busily engaged in developing factories, cattle raising and caring for the needs of tourists.

Physicians Elected

Physicians recently elected to membership on the Regional Advisory Group of the Arkansas Regional Medical Program are Dr. Joseph A. Norton, Little Rock; Dr. David H. Pontius, West Memphis; Dr. Glen F. Baker, Jonesboro; and Dr. Charles F. Wilkins of Russellville.

Awards Presented

H. King Wade, III, son of Dr. H. King Wade, Jr., of Hot Springs, was presented the Roberts Key at the annual honors day convocation at the University of Arkansas Medical Center. Each year this award is presented to the student having the highest grade average over four years.

At the same presentation ceremonies, Dr. Jasper L. McPhail and Dr. Dennis D. Lucy, Jr., were presented the Golden Apple Awards, Dr. McPhail as the outstanding clinical instructor and Dr. Lucy as the outstanding preclinical instructor. The Golden Apple Awards is the highest honor bestowed on faculty by students in the School of Medicine.

OBITUARY

Dr. Travis Mathews of Hazen died June 4, 1969, at the age of 47. He was city health officer and owner of Mathews Clinic in Hazen. Dr. Mathews graduated from the University of Arkansas Medical School in 1945. He was a charter member and director of Grand Prairie Country Club and a member of the Official Board of the Hazen Methodist Church. Survivors include his widow, Mrs. Sarah William Mathews, one son, one daughter, two sisters and his parents.



PROCEEDINGS OF SOCIETIES

At the meeting of the Craighead-Poinsett Medical Society last month, the new officers were introduced. All Jonesboro physicians, they are Dr. Charles Kemp, president; Dr. H. W. Keisker, president-elect; and Dr. Glen Baker, secretary-treasurer.

* * *



BOOK REVIEWS

DIAGNOSIS AND MANAGEMENT OF PAIN SYNDROMES, Bernard E. Finneson, M.D., illustrated, 337 pages, published by W. B. Saunders Company, Philadelphia, London and Toronto, 1969.

This text will be of extreme help in the management of patients with serious pain. It is complete in every respect. It has good illustrations and explicit instructions. It will be of value to all practicing physicians.

POST-TRAUMATIC PULMONARY INSUFFICIENCY, Various authors, illustrations, 234 pages, published by W. B. Saunders Company, Philadelphia, London and Toronto, 1969.

This small book consisting of only 234 pages makes very interesting reading. There are twelve case studies which are presented in excellent fashion with good photographs, charts, and graphs. After the first ten case work-ups, there are a series of chapters pertaining to general factors about post-traumatic pulmonary disease. For example, the biochemical changes are discussed. The physiology of the lung test is reviewed and outlined. There are even chapters on bacterial colonization and antibiotics. There is an excellent chapter on the general management of low-flow states.

This is an excellent book but principal interest would be to thoracic surgeons and the internist interested in pulmonary disease.



Tonography in Normal and Malnourished Children

A. Halasa (Amer Univ Hosp, Beirut, Lebanon) *Arch Ophthal* 81:328-330 (March) 1969

Tonographic studies were performed while 43 severely marasmic children and 33 normal controls ranging in age between 1 month and 1 year were under pentobarbital sodium sedation. The results showed no significant differences in the levels of Po and C values in the two groups. There was a statisically significant negative correlation between the levels of Po and weight in the normal children. These findings suggest similar dynamics in the eyes of the normal and marasmic children.

ANSWER—What's Your Diagnosis?

DIAGNOSIS:

Paratracheal nade secondary ta histaplasmasis.

X-RAY FINDINGS:

The mass widens the superior mediastinum ta the right and indents the trachea slightly. These findings represent a large paratracheal node, and in a child, are mast likely due to either histoplasmosis ar tuberculosis.

ANSWER—Electrocardiogram of the Month

RATE: 75 RHYTHM: Sinus

PR: 0.23 sec. QRS: .07 sec. QT: .32 sec.

SIGNIFICANT ABNORMALITIES:

Pralonged P-R interval.
Increased voltage S in right, R in left precardial leads.
Depressed RS-T segments I, II, aVL, left precordial leods.
T inversions I, II, aVL, left precardial leads.

INTERPRETATION: Abnarmal

Incomplete A-V black.
Left ventricular hypertraphy c subendacardial injury and ischemia.

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August, 1969

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Vol. 66 No. 3

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Surgery of Cleft Lip and Palate

Herbert Conway, M.D.*

The deformity of cleft lip and palate, occurring as it does in approximately one in seven hundred births, is not as bad as it was in former years. If the proper care is given to such imperfections, of tremendous importance to the unfortunate souls afflicted, this deformity will be of minor importance in the life of the individual. With proper corrective surgery and ancillary methods of treatment the cleft palate patient can be brought to the goal of good appearance, good detention and normal speech. It is to demonstrate that a program to effect these results can be established, that this presentation is made.

The exact date of surgery is not of tremendous importance. For many years I practiced the plan of primary repair of cleft lip at six weeks of age. These were the days when general anesthesia was the rule. The introduction of local anesthesia soon demonstrated that cleft lip repair can be done a few hours after birth, thus taking advantage of the resistance of a newborn infant to the trauma of a surgical procedure.

During the nineteenth century the repair of clefts of the palate was delayed until four or five years of age. Good repair was achieved by suturing of flaps of mucoperiosteum (staphylorrhaphy) or by movement of the horizontal plates of the maxillary and palatine bones (uranoplasty). Palate lengthening, by the push-back techniques of Dorrance or Wardill, supplemented by the pharyngeal flap (Rosenthal), demonstrated in the sixth decade of this century that surgery could provide acceptable speech. Therapy for speech was found to be a valuable adjunct. However, the problems of good dentition left much to be desired and the child had to await the appearance of permanent teeth, at age eight years, before effective orthodontics could be worked out. Often this meant the feared, mesial collapse of the maxillae in cases of double clefts of the palate. In such cases the premaxilla was displaced forward in an abnormal position. This meant the ultimate amputation of the important premaxilla with its firm support of the central third of the face and the important upper central incisor teeth. In the past eight or nine years this last and most difficult problem, namely the achievement of a correct upper jaw in bad alveolar clefts, has been met successfully. This has been brought about by maxillary orthopedics, a type of dental treatment by intra-oral splint. The maxillary bones are easily moved during infancy. In recent developments by dental and surgical specialists working in concert, the technique of maxillary orthopedics has been developed. In this method of management dental plates are moved in order to bring the maxillary fragments into proper alignment. Alveolar clefts are closed and premaxillae are brought backward and into line with the maxillary arch. About six weeks after birth the lip is repaired and a bone graft is used to hold the alveolar margins in proper alignment. It has been known that one can move the bones during infancy but also that they cannot be kept in their new positions. Now, by means of surgical talent the alveoli are held in place with a bone graft. During adolescence the plastic surgeon frequently encounters deformities which are the result of maldevelopment and maltreatment. These include pseudoprognathism, underdevelopment of the upper lip, and snub nose. Such abnormalities of development can be corrected by ramusotomy or mandibular resection, by intra-oral plates which carry a plumping device, or by an Abbe-Estlander flap, and by transposition of flaps for elongation of the nasal tip.

* New York, N. Y.

From The Department of Plastic and Reconstructive Surgery, The New York Hospital-Cornell Medical Center, 525 East Sixty-eighth Street, New York, New York 10021.

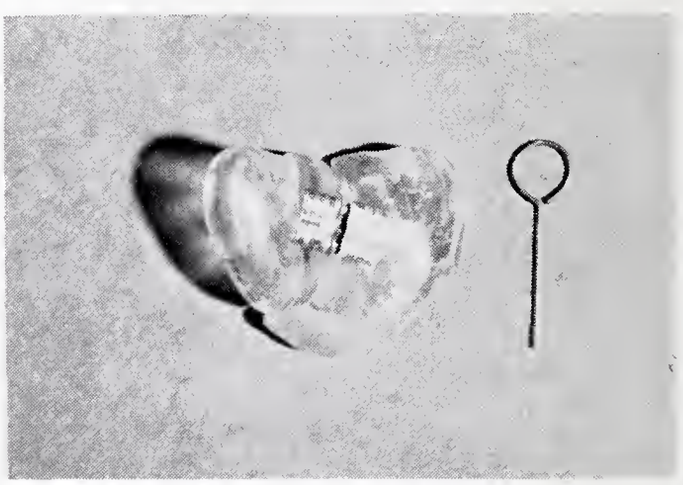
The mortality of patients with cleft lip and cleft palate was reduced to 3.8 percent in the latter part of the nineteenth century by Veau. In the antibiotic era, 1950-1960, the result in large clinics has varied from zero to 3.7 percent. Our mortality at The New York Hospital is 0.4 percent. Actually, the greatest number of the cleft palate operations are done by the resident plastic surgeons.

The technique of maxillary orthopedics, since it is the final breakthrough in the management of cleft palate patients, deserves further exposition. Largely through the efforts of McNeil[9,10] of Glasgow, Burston[2,3] of Liverpool, and Schmid of Stuttgart, we now know that it is possible to correct asymmetry or malpositioning of the maxillary arches by means of orthopedic techniques initiated during the first few weeks of life. By inserting an acrylic maxillary plate with corrective devices, rapid and effective positioning of the deformed arch can be accomplished. Since such procedures involve correction of the basic malalignment, that is, the position of the alveolar arch—not repositioning of the teeth—the process has been termed *maxillary orthopedics*. This process is effective in correcting the malposition and deformed shape of the maxillary arch. The bony cleft represents the significant problem. The absence of osseous continuity of alveolar ridges and of bony palate permits these structures to reassume a position of deformity. Johanson[6-8] of Göteborg and Schmid[11] of Stuttgart were the first to approach the problem of bony clefts by the insertion of bone grafts to span the defect. Corrective maxillary orthopedics, followed where necessary with bone grafts to fill in and stabilize the maxillary arches at the sites of clefts, and to fill the gap between the horizontal plates of the maxillae, has been explored by several surgeons, notably Johanson and Ohlsson in Sweden, Schuchardt[14] in Hamburg, Stellmach[15,16] and Schrudde[12,13] in Dusseldorf, Derechsweiler[4] in Munich, Cronin, Brauer and Reaves[1] in Houston, and Goulian and Conway in New York. The logical basis of this work and the outstanding results reported has caused this program to be adopted widely. The period of follow-up has not been long enough to establish without question that such orthopedic and surgical interference has no detrimental aspects. However, the beauty of the results reported to date and the logic of the therapy justify the continued use of the plan.

Technique of Maxillary Orthopedics

When a newborn child presents an alveolar arch requiring correction, an intra-oral impression of the entire maxillary arch is made as soon as is feasible, that is, during the first twenty-four to forty-eight hours of life. With a little practice, the entire procedure requires approximately twenty seconds and it can be done without risk as the infant lies in its bassinet. A dental stone model of the maxillary arch is made. A clear acrylic tray is designed to fit the maxillary arch. It is placed in the patient's mouth as soon as it is ready. Where there is a collapse of the lateral maxillary process, a jackscrew orthodontic expander, type A-611,* is incorporated into the denture which is fabricated in two halves, connected by the expander (Fig. 1). If the clinician

Figure 1



A denture with lateral expander. Key shown to the right is used for gradual adjustment.

can expect sufficient cooperation from reasonably intelligent parents, jackscrew adjustments can be made at varying intervals by the parents after the baby is at home. The average rate of such movement tolerated by the patient varies from a quarter turn daily of the orthodontic jackscrew to a quarter turn every third day. Adjustments by application and removal of plastic is accomplished at weekly visits to the clinic or surgeon's office. Too rapid contouring has not caused necrosis or irritation of the tissues, but merely the rejection of the denture. By using the clear acrylic tray, pressure areas can be determined by blanching of the underlying tissues. In the above described manner the recontouring process takes a period of about two months in

* Manufactured by Rocky Mountain Dental Products Corp., Denver, Colorado.

the newborn child with a complete palatal cleft and up to four months in the older child.

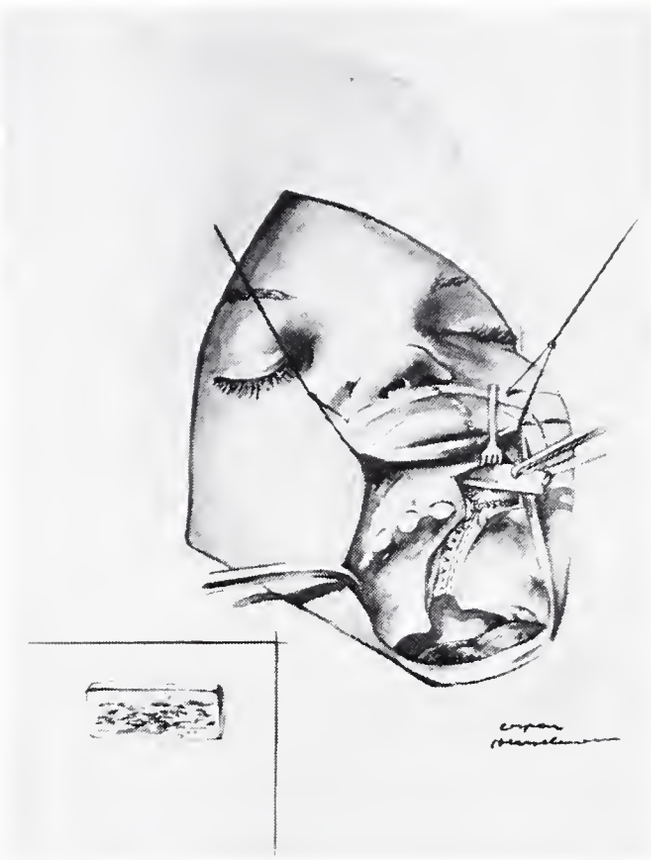
In the newborn baby operative surgery of the cleft lip is delayed until the orthopedic correction has been completed. The reasons for this are threefold. With the lip open there is much greater accessibility and this greatly simplifies fabrication, insertion, and removal of the denture. Also the uncorrected defect in the labial sulcus provides more adequate purchase area for the denture in the critical areas where pressure will have to be applied in the corrective process. The process can thus be carried out more rapidly and effectively. Finally, with correction of gross asymmetries of the arch in the region of the premaxilla, the stresses on the suture line following cheiloplasty are significantly reduced.

The corrective maxillary splint is retained after operative correction of the cleft lip. It is very gratifying to see how easily the newborn child accepts the corrective splint. These infants experience no difficulty with respiration. After a while the infant becomes so dependent on the prosthesis, which greatly facilitates feeding, that it displays marked displeasure when it is removed for daily cleaning and adjustment. Four to six weeks after repair of the cleft lip, the alveolar cleft is repaired.

Technique of Bone Grafting to Alveolar Arches and Horizontal Maxillary Areas

Under general anesthesia vomerine and lateral nasopalatine mucoperiosteal flaps are elevated and approximated. A subperiosteal pocket is created extending approximately 4.0 mm. to either side of the alveolar cleft on the labial aspect of the alveolar ridge and into this is placed a split rib graft, the size of which is determined by the nature of the existing osseous defect (Fig 2). These grafts measure 2.5 cm. in length. On occasion it is necessary to bend the graft by greenstick fracture in order to contour it to the curve of maxillary alveolar arch. In this manner, a continuous alveolar margin is established. A labial sulcus flap is then elevated, its base posterior, and this is rotated to cover the bone graft by extending it over the cleft to cover the graft and to overlie the nasal mucosal closure. The margins of the flap are approximated to give an oral mucosal layer of closure in the anterior portion of the cleft of the hard palate. Before placing the final sutures, cancellous bone chips acquired from the remaining half of the

Figure 2



Appearance during placement of a contoured split rib graft across the alveolar cleft into a subperiosteal pocket on either side of the cleft.

split rib graft are placed into the palatal aspect of the pocket to complete the osseous contouring in the region of the cleft. This also provides ultimate bony union of the two sides of the cleft palate in the region of the horizontal plates of the maxillae. The acrylic splint is applied in the region of the repair of the alveolar ridge, so that no pressure will be placed over the bone graft and it is reinserted. It is kept in place for six to eight weeks by which time the bone graft has established a firm, bony union bridging the defect.

Comment

For many years the plan of management in this clinic for clefts of the palate involving the alveolus has been conservative and conventional. This plan incorporated the repair of the cleft lip immediately after birth, the operative closure of the cleft by mobilization of soft tissues according to the techniques of Veau, Kilner or Wardill, and delay in orthodontic correction until approximately eight years of age at which time good, permanent dentition has ensued. This policy was based on repeated opinions of orthodontists that it possible to move deciduous teeth

Figure 3



X-ray of the bone graft lying across the anatomical cleft.

and infantile bony structures but impossible to hold the corrected position. It was reasoned that permanent teeth, with anatomical crowns for attachment of retainers, were required in order to maintain the correction which is achieved.

Recent developments placed proper emphasis on the role of the early bone graft as a means of retaining the achievement of maxillary orthopedics during early infancy. One is reminded of Dorrance's[5] classic volume *The Operative Study of Cleft Palate*. At the time of its publication problems of speech had been recognized and met by Dorrance's or Wardill's procedure for palatal lengthening. Later, the pharyngeal flap was added as an operative step to ensure the permanency of the palatal lengthening. Until the recent development of maxillary orthopedics and bone graft the anteriorly displaced premaxilla and the mesial collapse of the maxillary alveolar arches presented the major unanswered problems in the management of cleft palates. Although none of the clinics engaged in the presently adopted plan of (1) maxillary orthopedics immediately after birth and (2) cheiloplasty with bone graft to the alveolus and to horizontal maxillary areas as soon as orthopedic correction is achieved have employed it long enough to report final results as regards ultimate facial and maxillary growth, the rationale for the new plan is so appealing that it seems that the final chapter is being written as an addendum to Dorrance's classic.

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Diabetes in Pediatrics*

John C. Watts, Jr., M.D.

The pediatrician is faced with diabetes in two situations and I would like to start by discussing the babies of diabetic mothers. Most of you have seen these babies in the nursery, they are the big, fat baby in an isolette. These babies have actually been proven to have more fat because a direct analysis of their bodies have shown an increased amount of fat. More important than this is the fact that they have a decrease in the total body water and also in the extracellular water.

The babies of diabetic mothers are physiologically fragile and are more subject than normal babies to several conditions. The first of these is the respiratory distress syndrome which occurs in approximately 27 percent of the cases. There is a correlation between the time of delivery and the incidence of this disease, the earlier the delivery the greater the risk of it. The newborn of diabetic mothers seems to develop hypoglycemia more quickly than a normal newborn. In actual practice the normal newborn may have a very low blood sugar and be free of symptoms so the pediatrician is on the alert for symptoms of hypoglycemia. In my own experience this has not been a problem in the few babies I have cared for from diabetic mothers. There is also a greater instance of hyperbilirubinemia in the babies of diabetic mothers and approximately 40 percent of the babies will develop this during their stay in the nursery. The most important and most impressive thing about these babies is the high mortality rate. At the Boston Lying-In Hospital the overall mortality rate was 1.5 percent but the babies of diabetic mothers had a 9 percent mortality rate.

Now let's turn our attention to Juvenile Diabetes. Fortunately, juvenile diabetes is very rare. The disease occurs once every 2,500 children between the ages of 1 and 15 years. As you have heard, it is a genetically determined disease and it is an autosomal recessive trait. This means that the disease comes from both sides of the families.

In discussing the histopathology of diabetes I would like to make very clear the difference between the juvenile diabetic and the diabetic whose onset was in later life. Early in the course of juvenile diabetes there is hypertrophy of the pancreatic islet tissue, there is an increase in the amount of insulin like activity in the serum and insulin is extractable from the pancreas. Later these findings are all reversed and the child is in the total diabetic state, that is, he has no endogenous insulin whereas the adult patient usually can produce some insulin.

The course of the juvenile diabetic is a definite one, typically that found in the textbooks. Usually we see the child with vomiting and the symptoms of muscle cramps and aches. On questioning there has been a history of weight loss, polyuria, polydipsia and polyphagia. After some three to six months the child enters what is called a phase of remission when he is more tolerant of glucose and the insulin dose is lower. At this time the children will respond to oral antidiabetic agents but these are not given. After the remission phase the juvenile diabetic slowly enters the phase of total diabetes when his need for insulin increases and there is a complete atrophy of the islet cells. The juvenile diabetic usually requires an average dose of .41 units of insulin per pound of body weight.

Now let us discuss the treatment of diabetic ketoacidosis or coma. In general, treating children is easier than treating adults because there are no complications and because renal function is good. At the onset we get a blood sugar, the electrolyte studies, start an IV and insert an indwelling catheter. We use regular insulin and give this subcutaneously unless the patient is in shock then it is given intravenously. The average dose required of a patient in ketoacidosis is ¼ to ½ unit per pound of body weight and in coma ½ to 1 unit per pound of body weight. There are several aids in determining the dose and these include the blood sugar, a semi quantitative estimation of the plasma ketones and, of course, the urine sugars.

Intravenous fluids are given in large amounts, approximately 4 liter per square meter of body surface. Half of this is given in the first eight hours and the other half the next sixteen hours. I start with normal saline and add potassium as

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soon as good renal function has been established. As you know, hypokalemia develops occasionally and we are on the alert for this. Glucose is added when the blood sugar is down to approximately 250 mg percent. I might add that some regimes advocate the use of sodium bicarbonate if the CO2 is less than 10 meq per liter but I personally have had no experience with this.

We like to begin oral fluids on these patients as soon as possible and usually by the 18th or 24th hour the child is able to take oral fluids well and soon is starting a diabetic diet. I should emphasize the very important point that during treatment of the diabetic child we stress the avoidance of hypoglycemia and this is particularly true during the first hospitalization when the child is frightened and has so much to learn about his disease.

The diabetic diet that we prescribe is 1,000 calories plus 100 calories per year of age and it is distributed so that 40 percent of the calories come from carbohydrate, 20 percent from protein and 40 percent from fat. The calories are distributed 20 percent for breakfast and 40 percent for each of the other meals. We adjust the child's diet in order to maintain his proper growth and weight gain. I might add that unrestricted diets or free diets have been used but today are not held in favor.

The insulin requirement in a child with new diabetes can be worked out while he is in the hospital, however, the final adjustments must be made as an outpatient. Almost all children are treated with an intermediate acting insulin such as NPH, lente or globin.

The education of the parents and the child is one of the most important functions we have. I have found it very helpful to have both parents and the child present when we go over the instructions and directions. Most children by the age of six are able to give their injections and by the age of twelve to fourteen they assume total management of their disease. In teaching the family about diabetes we stress that it came from both sides of the family and that children can have a full, happy life with this disease. We want the child to live with his diabetes and not for it. We teach them about hypoglycemia and early recognition of this complication is very important. Later on we teach them how to treat this complication. We also have to teach the child how to test and record his urine. We use the second specimen technique where the child voids and discards all the first voiding and a short time later collects his specimen which is tested. A six-year-old child can test his own urine but I feel that parents should supervise them and even the older children should have periodic supervision of their technique. The child has to learn about insulin, the onset of duration and the time of its most intense activity. They must learn how to give a hyperdermic injection, how to measure the dose, how to sterilize the needle and syringes, how to store insulin, how to handle it on a trip, how to mix insulins, and we stress the importance of alternating the site of injections. Also, the parents and the child must go over their diet again and again to learn what they can have, how to arrange mid-meal feeding and to learn the diet for illnesses. We also teach the children the effects of exercise and encourage their participation in athletic events.

In managing a child with diabetes there are many problems and these involve the child, his parents, occasionally the school, classmates and the physician. I would list the testing of the urine as one of the most serious problems because very often the child will actually not test his urine or he will fail to use the second specimen technique. Perhaps most of you have heard about the child who came to the clinic with his record neatly filled out and every urine recorded, one week in advance! In testing and recording urines, I use only before breakfast and before supper tests after the child is under control.

We have to expect breaks in the diet and I feel that the parents must learn to expect them also. Usually the child is warned and admonished about this so much that as his doctor I usually stand by him and say nothing because he usually ends up in the hospital and pays the price of having gone into acidosis.

Insulin reactions are a severe problem and a very real one. They can be so upsetting to parents and to the child alike; in some cases they are severe enough to cause convulsions. In one series of patients 70 percent of the children had experienced a severe reaction and of this same group only one percent had had no reaction at all. We teach the child to carry candy and to have some readily available carbohydrate at home. They like to wear ID cards which would help should he be in a strange place. The parents are instructed to keep aqueous adrenalin 1:1000

or glucagon at home to administer should this reaction occur.

There are many psychological problems associated with diabetes and I would just say that by the time the child is 16 or 17 years old he has resolved this and from then on seems to manage his condition pretty well.

In discussing complications of diabetes I think that we should forewarn the children that lipodystrophy may occur. This is a harmless condition and no treatment is required but can be very distracting to the children. It occurs as an atrophy of the subcutaneous fat and there is a little dimple on the skin, or it occurs as a hypertrophy with a swollen lump of fat over the sites of injections.

The vascular changes of diabetes are perhaps an integral part of the disease. They have been demonstrated in pre-diabetics, that is the child whose parents are both diabetic. In some instances nephropathy has been demonstrated in a child who has had diabetes only two months. What is the risk of a child developing retinopathy? If the patient was under 20 years of age at the onset of diabetes and had had the disease 11 years, 11 percent will get the retinopathy in the next year. If the duration of the disease was 21 years there is a 70 percent risk of developing it within the next year. In developing nephropathy the risk is 33 percent after having had the disease from 17 to 25 years. I have not seen a child with neuropathy but I understand that the prognosis for the recovery is excellent. Dr. White has pointed out that there are two paths that angiopathy follows; the first is in the child who is under 10 when the diabetes starts and is usually female. Her lesions involve the eye and kidney. The other course is that in a patient who is over 10 when diabetes develops. They are usually male and they have minimal retinal and renal involvement but develop involvement of the medium size vessels and eventually have coronary occlusion. There seem to be two things that we can do to help prevent these vascular lesions and the first is to treat infection vigorously and the second is to achieve good control. I do not feel that I should define what I mean by good control because there are several criteria listed in textbooks for this. I do feel that we should try to prevent ketoacidosis and above all to prevent hypoglycemia.

The child with juvenile diabetes will have a delay in sexual maturation but eventually does develop sexually. They ultimately reach normal adult height and weight. The mortality after 25 years of diabetes is that 40 percent die within one year and after 30 years of diabetes 80 percent die within one year. So in effect, the child with diabetes has two-thirds of a normal life span. The pediatrician's aim, or at least mine, is to assure that these years are good ones and that the child learns to live with his diabetes and not for it.

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STUDIES FROM
THE UNIVERSITY OF ARKANSAS MEDICAL CENTER
THE DEPARTMENT OF
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The Use of Valium* in Labor

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Introduction

The minor tranquilizers, Phenergan,* Largon,‡ and Visatril,§ have played a successful role in decreasing the apprehension that often occurs during obstetric labor. It has come to our attention that a drug of this nature might be of even greater use in a clinic population such as ours, who are often grossly unprepared for the trauma of labor and delivery. Valium, in particular, has been shown to be effective for preoperative medication and to have a wide margin of safety for both the mother and the newborn.[1,2,3] Nisbet, et al.,[4] showed that Valium potentiated the effects of Demerol† during labor and had no demonstrable effects on the infant's Apgar scores.

The purpose of this study was to evaluate the effects of parenteral Valium on women in active labor and to determine whether the total dose of depressive analgesics, i.e., Demerol, could be substantially reduced. As Valium is a muscle relaxant, a further objective was to determine the effect of Valium administration on the infant's response post-delivery.

Materials and Methods

Forty-eight normal patients, in early labor, were utilized. Each prospective patient was examined upon admission and the status of labor determined by frequency and duration of contractions, dilatation and effacement of cervix, and presentation and position of the presenting part.

Medication was administered as requested by the attending physician. When administered, Valium was given slowly, intravenously titrating the patient until she exhibited slurred speech with an upper limit in dosage of 20 mgm. Fetal heart rate and maternal blood pressure were observed and recorded immediately prior to, and fifteen minutes after administration of Valium. An evaluation of the patient's state of alertness was also made at these times. Valium was not given intramuscularly.

If at a later time additional medication was requested, Demerol was provided intravenously in 12.5 mg. increments until the patient relaxed between contractions.

It was expected that the majority of patients would deliver with Valium and regional anesthesia.

If a local or general anesthetic was requested or required, it was provided and so recorded.

At delivery, blood from the umbilical artery and vein, and maternal venous blood was drawn whenever possible and complete blood-gas studies were performed on them. Determinations were also performed on a femoral vein sample from the infant at one hour of age. If N_aHCO_3 was indicated in the newborn post-delivery, a venous sample was obtained prior to its administration. One, five, and ten minute Apgar scores were completed on each infant.

Clinical evaluations of the infant by the Pediatric Staff were obtained one and twenty-four

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This study was made possible by a Grant-In-Aid by Roche Laboratories, Nutley, New Jersey.
* Diazepam, Roche.
† Deceased.
* Promethazine, Wyeth.
‡ Propiomazine, Wyeth.
§ Hydroxyzine, Pfizer.
† Meperidine, Winthrop.

hours after birth, as well as a maternal and physician's evaluation of analgesia approximately twenty-four hours after delivery.

Results

Of the forty-eight patients who received Valium, forty-five were considered in retrospect to be normal and conductive to study. Of the three excluded, two were premature infants and the remaining infant was not followed in the nursery. The average gravity was 3.24 with 17 (37.7%) primigravidas. The mean dose of Valium was 12.06 mg. with a range of 9 to 20 mg.

Seven of forty-five patients (15.6%) delivered with Valium, Demerol, and conduction or general anesthesia. The majority of patients delivered without Demerol, but with Valium and conduction anesthesia (low spinal 17.8%, epidural 42.4%, or pudendal 2.2%). 6.7% of the patients delivered with Valium and general anesthesia (nitrous ovide-oxygen). The remaining 15.6% of the patients delivered with Valium only.

None of the patients were rated by the physician as having excellent analgesia (Table 1).

TABLE 1
PHYSICIAN'S EVALUATION OF LABOR ANALGESIA

Excellent	0
Good	21
Fair	21
Poor	3

Twenty-one of forty-five patients (46.7%) were evaluated as having good analgesia and an identical number were rated as having fair analgesia. Three of forty-five (6.7%) were evaluated as having poor analgesia. Two of the patients became euphoric and one experienced nausea and vomiting after receiving Valium. Approximately one-fourth of the patients experienced some degree of amnesia. No hypotension or other side effects were noted. Upon administration of Valium, all patients exhibited slurred speech, became drowsy and relaxed. Most experienced some degree of pain relief. The mothers were questioned 24 hours post-delivery (Table 2) as to the effectiveness of the pre-delivery medication. 62% (28 of 45) responded favorably to the labor and analgesia.

TABLE 2
MOTHER'S EVALUATION OF LABOR ANALGESIA
24 HOURS AFTER DELIVERY

Excellent	3
Good	25
Fair	15
Poor	2

Seven of forty-five infants (15.6%) had one minute Apgar scores of six or below (Table 3).

TABLE 3
APGAR SCORE

SCORE	At One Minute No. of Pts.	At Five Minutes No. of Pts.	At 10 Minutes No. of Pts.
1	2	---	---
3	1	---	---
4	1	---	---
5	---	1	---
6	3	1	1
7	4	1	1
8	13	2	3
9	13	10	2
10	8	30	38

The infants were evaluated by the pediatrician at one and 24 hours postpartum. As seen from Table 4, the majority of infants exhibited good muscle tone, adequate response to stimuli, had a good cry, and exhibited normal respiration and spontaneous activity at these times. However 6 of 45 (13%) were considered hypotonic at one hour and one infant was hypotonic at 24 hours. Of the six hypotonic infants, three were considered only slightly hypotonic and assessed as normal at one hour. The remaining three infants were hypotonic and depressed at one hour. Of these, one was felt to be secondary to a tight nuchal cord, another secondary to a difficult forcep extraction and the third was of unknown etiology. Forty of forty-five infants (89%) were assessed as normal at one hour, and 43 of 45 (96%) at 24 hours.

TABLE 4
EVALUATION OF THE NEWBORN

	ONE HOUR No. of Pts.	24 HOURS No. of Pts.
Tone		
Normal	39	44
Hypotonic	6	1
Response to Stimuli		
Normal	41	43
Brief	4	1
Excessive	---	1
Cry-character of		
Normal	39	44
Weak	4	---
High Pitched	2	---
Weak and High Pitched	---	1
Character of Respiration		
Normal	38	43
Shallow	5	2
Deep Breaths	2	---
Spontaneous Activity		
Normal	40	44
Diminished	5	1
Assessment of Infant		
Normal	40	43
Depressed	5	1
Hyperactive	---	1

Of the depressed infants, three were traceable to nuchal cords, one was due to a difficult forcep

TABLE 5
BLOOD DETERMINATIONS

Variable	Maternal Venous Blood at Delivery		Cord Blood Umbilical Vein at Del.		Cord Blood Umbilical Artery at Del.		Infant's Blood Femoral Vein at Del.	
	No. of Observations	Mean	No. of Observations	Mean	No. of Observations	Mean	No. of Observations	Mean
pH	46	7.37	46	7.33	42	7.24	43	7.28
PCO_2	45	37.8	45	42.8	36	58.8	38	48.6
Total CO_2	45	22.3	45	23.1	36	25.9	38	23.1
Buffer Base	45	42.7	45	43.3	36	41.7	38	42.3
Base Excess	45	−3.6	45	−3.5	36	−4.1	38	−5.2
Standard Bicarb.	45	20.9	45	20.5	36	19.1	38	19.6
Actual Bicarb.	45	20.9	45	21.8	36	24.1	38	21.6
PO_2	45	55.8	45	41.2	34	24.7	38	45.5
O_2 Saturation	45	82.3	45	78.0	34	57.9	38	84.2
Hematocrit	45	37.2	45	48.3	36	48.9	38	53.9

extraction, and three were of unknown etiology. Of the seven infants with low Apgar scores at one minute, three had Apgar scores greater than six at five and ten minutes, and were considered normal at 1 and 24 hours. One infant (a premature) expired at age twenty-four hours with a final diagnosis of prematurity and severe hyaline membrane disease. Seven of the forty-five were treated with intravenous bicarbonate during the first one hour of life. Two of the 45 infants were resuscitated by means of intubation of the trachea.

The mean umbilical artery pH at birth was 7.24, and mean umbilical vein pH was 7.33, the maternal vein 7.37 and newborn femoral vein at one hour or before if N_aHCO_3 was administered, was 7.28 (Table 5).

In our series of patients, the blood-gas studies, percentage of low Apgars, and other ratings of infants are in agreement with normal values determined for this hospital.[5]

Discussion

The effects of rapidly administered Valium on patients in active labor seems to be one of a production of a drowsy or sleepy state as the average patient prior to Valium administration was "awake, alert" and the average patient after Valium was "asleep" but easily aroused. The patients and physicians gave similar ratings as to the effectiveness of Valium, and it definitely contributed to the patient's comfort.

The dosage of depressive narcotics used, i.e., Demerol, was reduced as can be seen by the fact that 41 of 48 patients had no Demerol. This can also be shown by the fact that 4 of 27 (15%) of patients with epidurals received Demerol as compared to an epidural study[6] of 100 consecutive patients were 52 of 100 (52%) received Demerol. Also, in an evaluation of patients given spinal anesthesia,[7] 10 or 34 (29%) received Demerol compared to 2 of 11 (18%) receiving Demerol of those in our study receiving spinal anesthesia.

Valium apparently has little effect on the infant's Apgar score or blood-gas studies. The Apgar score compares favorably with those of Slnider[8] and Thompson.[9] The blood-gas studies at birth and one hour reveal no discrepancy caused by Valium when compared with normals for this hospital.[5]

Because there is no control group, no definite statement can be made concerning the effect of Valium on the infant's muscle tone. While six infants were considered hypotonic at one hour, three of these were only slightly hypotonic, one in the upper extremities only, and were assessed as normal. Of the three that were significantly hypnotic at one hour, cause could be traced to a difficult delivery. It is our impression that there seems to be little effect that could definitely be attributed to Valium, in the doses used.

Summary and Conclusions

Valium was used in the conduct of labor and delivery of forty-eight patients. It appears to offer considerable sedative and analgesic properties with little effect on the newborn.

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Microbian Abscesses of the Liver

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Un Med Canada 98:55-62 (Jan) 1969

From 1950 to 1967, 16 liver abscesses were observed at the Hotel-Dieu of Montreal. *Escherichia coli* was isolated six times, *Streptococcus faecilis* twice, and *Proteus mirabilis* twice. The following bacteria were isolated once: *Staphylococcus aureus, Klebsiella pneumoniae,* and *Bacilius fusiformis.* In five cases, no pathogenic organisms were recovered. Clinical features of hepatic abscesses are variable and depend on its physiopathology. The infection can reach the liver tissue by five different routes: the portal vein, the biliary tract, the arteries, the lymphatics, and transcapsularly by means of a trauma. A definite diagnosis may be difficult and require a confirmation of hepatic suppuration. In order to recognize liver abscesses, it is best to include this possibility in the differential diagnosis. The preferred method is liver scanning. In this series, there were four curves and 12 deaths. Prognosis can be improved. Liver scintillography permits more rapid diagnosis and facilitates elective surgery. An improved drainage technique will evacuate purulent material better and prevent nearby contamination. The antibio-therapy should be potent, of sufficient dosage, and based on the results of sensitivity tests.

Insulin, Substrate Transport, and Protein Synthesis in Muscle

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Specific labeling by 2-hydroxy-5-nitrobenzyl bromide of tryptophan residues in rat diaphragm abolishes insulin stimulation of sugar and amino acid uptake, and of the incorporation of previously accumulated amino acid into muscle protein. A brief period of preincubation of tissues with insulin protects against the anti-insulin effects of the labeling reagent. Tryptophan residues of a polypeptide component in the cell membrane may be involved in the recognition of the hormone. Complementary interaction of this component with insulin is regarded as primary to the latter's effects on muscle.

Collagenolytic Activity of Alkali-Burned Corneas

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Collagenolytic activity of alkali-burned corneas of rabbits was investigated using a tissue culture assay technique. The technique was standardized and in every instance tissues from the immediate vicinity of the ulcers or perforations showed substantial collagenase production while, generally, tissues more than 2 mm away from the lesions were free of enzyme activity.



SURGERY at the UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE*

*Under the direction of Gilbert Campbell, M.D., Professor of Surgery.

Corrosive Stricture of the Stomach in a Phosphorus Worker*

Raymond C. Read, M.D., F.A.C.S., and Harold J. White, M.D.

Whereas caustic damage to the esophagus from lye is well known, pyloric stenosis caused by contracture of a chemical burn in the gastric antrum is not, even though it was first reported in 1828 and has been described many times since.[1] The lesion is unusual since it is only rarely produced by alkalies, concentrated acids almost always being responsible. Today these latter are practically never ingested except intentionally and then obviously death can rapidly supervene. If the patient survives, corrosion of the stomach may be difficult to diagnose for, surprisingly, the esophagus is frequently spared. Because of ignorance, real or feigned, regarding what was taken, compounded by the silent interval before vomiting occurs, symptoms are generally attributed, in the absence of dysphagia, to carcinoma, or, after a negative biopsy, peptic disease. The importance of the present case relates to the fact that although the lesion satisfied the criteria for corrosive stricture of the stomach it occurred in a handler of white phosphorus. This association has not been reported previously.

Case Report

G. S., a 48-year-old Negro male, was first admitted to the Little Rock Veterans Administration Hospital on May 23, 1967, with blistering of the left arm and hand as well as the right hip. He was considered to be suffering from either spider bites or contact dermatitis and was successfully treated with locally applied ointments. The patient was next seen on July 17, 1968, complaining of a sort throat which made it difficult to speak or swallow. The illness began four days before with nausea and occasional vomiting. The following day his stools were loose and he could only swallow liquids. Examination showed the pharynx to be covered with a thick brownish exudate. The tonsils were otherwise unremarkable. Indirect laryngoscopy revealed swelling of the epiglottis and arytenoids. Their margins had a "burned white" appearance. Temperature was 99° F. White blood count was 12,200/cu mm with 67% neutrophils. He was thought to have Vincent's angina or some other bacterial infection of the throat but chemical pharyngitis was mentioned as a possibility. Culture grew out B. Streptococci. He was treated with penicillin for five days and discharged July 29, 1968. Three days later while at home he started to experience nausea, anorexia and a vague epigastric pain unrelieved by antacids, milk or food. He filled up rapidly after eating and began occasionally to vomit coffee ground or bright red material. His stools were loose. No one else in the family was affected. He denied using alcohol. His symptoms continued and after four weeks when his weight had dropped 20 pounds and his feet began to swell he returned to our hospital. Examination was negative except for his haggard

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appearance and a dilated stomach with a succussion splash. Plain films of the abdomen confirmed the presence of gastric distention while the GI series suggested benign pyloric stenosis (Fig. 1). Barium enema was normal. Gastric

Figure 1



This is the GI Series showing "Pyloric Stenosis."

washings were negative for malignant cells. He had a mild anemia but serum electrolyte concentrations were in the normal range. Since he did not "open up" after some days of gastric suction with intravenous feedings, an operation was carried out on August 30, 1968.

The gastric antrum 5-6 cm proximal to the pylorus (which was normal) was narrowed to the size of a pencil by a concentric 3 cm shallow ulceration. Its rim was indurated but not undermined. The base appeared greyish-white and felt gritty. There were a few lymph nodes beneath the lesser omentum but the stomach was not attached to them or the pancreas behind. Frozen sections of a biopsy from the edge of the lesion were benign so a 50% gastrectomy (antrectomy) was undertaken with vagotomy and a Billroth II reconstruction. The patient made an uneventful recovery and has returned to work.

Three months postoperatively the patient was re-evaluated to rule out chronic phosphorus toxicity. However, he had not returned to his old job of packing bombs with white phosphorus. There were no symptoms and physical examination was negative. Complete blood count, BUN, blood sugar, liver function studies and serum protein analyses were all within normal limits. Serum calcium was 9.1 mg% with a phosphorus of 3.75. Transaminase measurements were also normal. Twelve hour gastric analysis revealed no free hydrochloric acid. The Hollander test was likewise negative. Bone survey, chest X-ray, esophagram, GI series, EKG and dental films were read as normal with a well functioning gastroenterostomy. We were unable to find evidence of occupational disease.

Pathological Examination

At first the lesion was considered to be another example of benign gastric ulcer. However, the concentric configuration, as well as its superficial nature, infiltrating but not eroding the muscularis cast doubt on this diagnosis. More careful examination of the gross specimen revealed a shallow ulceration. The rim was indurated significantly, a gritty sensation was felt on cutting through the ulcerated lesion.

Microscopic examination confirmed the gross impression, namely, a shallow ulcer containing fibrin debris and leukocytic infiltrate (Figs. 2, 3, 4). This infiltrate consisted chiefly of mono-

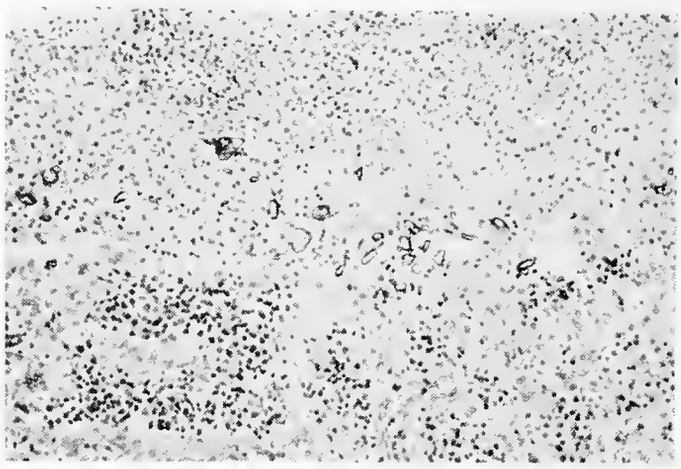
Figure 2



Low power view of stomach showing shallow ulceration, slightly thickened wall, sub-mucosal edema and fibrobsis. X5

nuclear cells. Just below the surface of the ulcer and only in the ulcerated portion numerous collections of acellular, crystalline-like particles

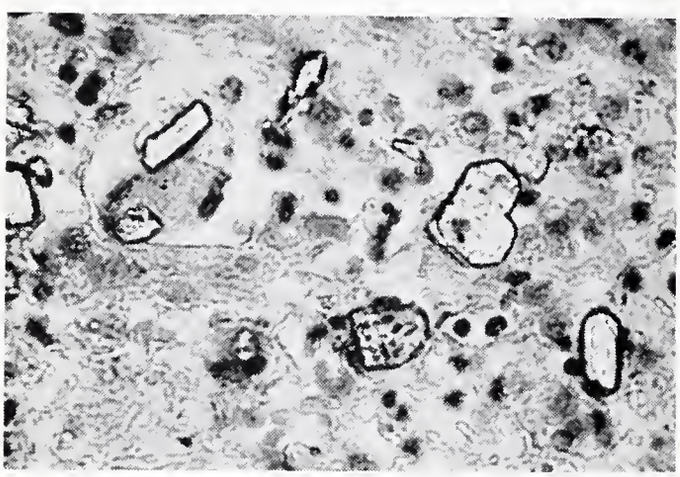
Figure 3



Portion of shallow ulcer. Note dense infiltrations of leukocytes, chiefly mononuclear. A few "Crystalloids" can be seen. X100

were seen. These "crystalloids" varied in size from 1 to 25 microns, were irregular in shape and could be visualized under polarized light (Figs. 3 and 4). The exact chemical nature of this material cannot be determined but there is a strong suggestion that it represents phosphorus pentoxide.

Figure 4



High power view of Crystalloid material under partially polarized light. X450

Discussion

The clinical picture mimics the classic descriptions of what follows after a sublethal amount of concentrated acid is swallowed. Early soreness of the throat with exudate and hoarseness along with difficulty in swallowing is followed two to six weeks later by a tight stricture of the gastric antrum which can only be relieved by surgery. Corrosion extends to the submucosa of the stomach where the caustic is held after passing rapidly down an undamaged esophagus (affected in only 6-16%). The commonest history obtained in these cases is of attempting suicide with toilet bowl cleanser containing hydrochloric acid, sulphuric acid or one of its anhydrides. No such story was elicited here. Circumstantial evidence points to elemental phosphorus in this instance. Our patient delivered white phosphorus from under water into shell casings into which it was packed. He was protected by a shield from spray but did not wear a mask. He was thus exposed to fumes containing the pentoxide and other oxidation products formed when phosphorus comes into contact with air. Every now and then "explosions" occurred and he would be covered in dust and smoke. Sore throats and bronchial complaints are common in this environment. It seems possible, although never previously documented, that in clearing his throat during a particularly bad episode enough of the element was swallowed to release, after hydration in the stomach, significant amounts of phosphorus and phosphoric acids. These then corroded the prepyloric area.

Each of his three hospitalizations were initially classified as mundane; contact dermatitis, strep throat and gastric ulcer. Even the first is better explained by occupational hazard since he was working at that time with vesicant gases. The possibility of a connection between this man's apparently separate illnesses and his employment was for a number of reasons only realized later. He lived and was treated fifty miles away from work. The patient never reported to the medical staff at the arsenal. Delay between "being dusted" and his complaints was long enough so that his blissful ignorance regarding risks involved, justified by familiarity with previous apparently innocuous episodes, was not disturbed. Finally, subacute toxicity of elemental phosphorus and its products is not documented. There is a gap in our medical knowledge between death from an overdose of rat poison and long-term exposure resulting in such well known manifestations as phossy jaw and liver disease.

Summary

A case of constrictive stricture of the gastric antrum is described in a 48-year-old munitions

worker who earlier had contact dermatitis and chemical pharyngitis. It is suggested that the development of this patient's lesion which was successfully treated by partial gastrectomy relates to his handling of white phosphorus.

We would like to thank Dr. Robert M. Stainton, Staff Surgeon, and Dr. Robert Janes, Surgical Resident, Veterans Administration Hospital, and Dr. Graham of the Pine Bluff Arsenal, Pine Bluff, Arkansas, for their assistance in the management of this patient.

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Proinsulin

R. E. Chance (Lilly Research Laboratories, Eli Lilly & Co, Indianapolis) and R. M. Ellis

Arch Intern Med 123:229-236 (March) 1969

Biosynthesis of insulin occurs in the β-cell via a single chain protein, proinsulin, which is converted to insulin by cleavage of a peptide connecting the COOH terminus of the B chain to the NH_2 terminus of the A chain. The primary structure of porcine proinsulin is known. Differences in the sequences of the porcine and bovine connecting peptides are reflected by immunological differences between the respective proinsulins. Proinsulin can be detected in urine and blood of certain diabetic individuals and may be related to another form of blood insulin, "big" insulin. Although much less effective, proinsulin mimics the actions of insulin on isolated adipose and diaphragm tissues. This is not an intrinsic activity but the result of tissue conversion to a molecule with insulin-like effects.

Change From Fetal to Adult Hemoglobin in Relation to Changes in the A Antigen of Human Erythrocytes

F. J. Grundbacher (Medical College of Virginia, Richmond)

Acta Haemat 40:322-328 (No. 6) 1969

Strength of the red cell A antigen and level of adult hemoglobin were significantly correlated in newborns, even after correction for variation in birth weight and duration of gestation. Furthermore, strength of the A antigen was significantly higher in girls than in boys and more closely associated with birth weight than with duration of gestation. On the other hand, percentage of adult hemoglobin was somewhat more closely associated with duration of gestation than with birth weight. Relative development of the infant (expressed in birth weight) has a marked effect on the change in the A antigen; the change in hemoglobin is more dependent on chronological age of the infant.



DEPARTMENT OF

PEDIATRICS

UNIVERSITY OF ARKANSAS
SCHOOL OF MEDICINE

Hearing Disorders in the Pediatric Patient: A Major Medical Problem

John Walton, M.A.*

The normal child hears meaningful speech from the time of birth, and usually has learned to speak by age two years. The almost simultaneous development of hearing, language and speech concepts (in normal infants) is an exciting and remarkable phenomenon of child development which has been, to some extent, neglected by the practicing physician. Many of the standard child development examinations are heavily weighted in favor of motor development rather than the careful observation of the emergence of skills subserved by the special senses.

The Infant and Young Child

Normal Development

As with many systems, the intrauterine development of the organs of hearing take place so that the infant may be ready to hear and to function effectively from the time of birth onward. Dr. Frederick Richardson, a Pediatrician at Johns Hopkins University, has given five steps in the normal development of the child's hearing apparatus as it relates to brain development, language and speech.[1]

1. Alerting: the startle reflex from the time of birth.
2. Orienting: turning toward the source of sound.
3. Discrimination: knowing what two sounds are different—loud and soft.
4. Recognition: knowing two sounds are different and recognizing the objects that make the sounds (big bell—loud sound; little bell—soft sound).
5. Categorization: placement of sounds into categories (typewriter, adding machine or both machines, but have different functions).

It is obvious that the above functions are necessary for normal language and speech development.

Screening Tests for the Infant

Unfortunately, the physician sees many children who have problems with the auditory mechanism and who do not develop normal language and speech. In fact, unless their hearing deficiency is discovered at a very early age and handled in a special way, such a child may never develop acceptable speech. The physician will discover that the child who does not hear normally, will not respond to the following:

Ask the parents:

A. During the babies first three months:
   1. Do loud sounds and strange sounds startle, frighten or amuse him?
   2. Does he notice the sound of footsteps approaching his crib?
   3. Does he notice his mother's voice before he sees her?

B. During the months from four through six:
   1. Does he turn his head to localize a sound, especially his mother's voice?
   2. Does he react to familiar sounds in his

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environment, such as the barking of a dog, doorbell, or telephone ringing?
3. Does he repeat any sounds he makes or hears others make?

C. During the months from seven through twelve:
1. Does the child show understanding of words made important to him through experience, like the names of food, pets, toys, family members?
2. Does the child obey simple commands?

D. During the year from one to two:
1. Does the child have a jargon or gibberish which sounds like he is trying to imitate the sounds and inflectional patterns of speech he hears around him?
2. Besides words like "Ma-ma," "Da-da," and "No," does the child have sounds which stand for words like "Bye-bye," "More," "All gone," etc.?

E. During the year from two to three:
1. Does the child follow more complex demands?[2]

After gathering the above information from the parent, the physician can perform some simple sound toy tests to gather further information about the hearing status. Simply place the toys where the child cannot see you move, first on the right and then on the left, and present an auditory stimuli while observing closely the child's reactions. Care should be taken that the response is auditory and not visual. The physician can imitate the infant's vocalizations and often elicit a response. Two- and three-year-old children are usually capable of following simple commands and, if so, he can make the commands increasingly complex (from "Go to Ma-ma," to "Open and shut the door"), ("Show me your ear," "Show me the doll's ear").

It must be noted that the tuning fork has been found to be least reliable with infants and young children because the pure tones have no meaning to them. Therefore, the use of familiar sounds and objects gives a better indication of the child's true hearing status.

Illustrated Cases of Peripheral Deafness

S. J. was a nineteen-month-old boy who was seen for the first time in the University of Arkansas Medical Center Pediatric Clinic on referral from a private physician.

Chief Complaint: At age nineteen months, he neither walked nor talked.

Developmental History: Sat alone at eight to nine months and had good hand control by six to seven months. He would pull up at one year but still would not walk alone.

He was alert to visual stimuli and responded to loud noises and vibrations. He used no words but frequently grunted or hummed to himself. He also pulled at his ears a lot. He did not respond to normal speech. He had frequent temper tantrums.

Past History: Frequent vomiting in early life and continuous cold symptoms all winter.

Physical Examination:

Ears:

Canals: Normal.

T.M.'s: Right: Pearly gray and glistening. Left: Pearly gray and glistening.

Neurological: No neurological problem other than possible deafness.

Auditory Findings: S. J. could not be conditioned to respond to pure tone stimuli by play audiometry. Sound field testing was attempted and only one response could be elicited. A noisemaker presented at a level of 100 db caused S. J. to react by looking at his mother in a questioning manner. All other presentations of stimuli were not fruitful.

Impressions: Although S. J.'s response to auditory stimulation and his general behavioral characteristics seem to indicate that he is a profoundly deaf child, final impressions have been deferred until the results of certain tests are known.

The Older Child

The child from infancy to three years has been discussed and the case history has been presented, but what of the child who is four years old and older? The following case history will show the importance of routine audiological screening procedures by the private physician in his office.

G. R. was an eight-year-old Negro female who was referred to the E.N.T. Department at the University of Arkansas Medical Center on January 28, 1969. The mother stated that the child had "an obstructed middle ear, can't hear out of it."

Present Illness: Failed a routine hearing screening and was referred to the University of Arkansas Medical Center E.N.T. Department.

Past History: No history of ear infections or trauma to ears, no allergenic history, no history of frequent sore throats.

Physical Examination:

Ears:

Canals: Abundance of dark crumen but not occluded.

T.M.'s: Right: Intact, glistening white with sharp light reflex. Left: Intact, dull gray, poor light reflex, no perforations.

Mastoids: Right: Neither enlarged nor tender. Left: Neither enlarged nor tender.

Mouth: No oral lesions, tonsils do not appear to be enlarged, no inflammation.

Orpharynx: No abnormality seen.

Nasopharynx: No abnormality seen.

Larynx and Hypopharynx: No abnormalities seen.

Recommendations: Further audiological tests.

Audiological Findings: Right ear, hearing is within normal limits. Left ear, air conduction tests revealed an average of 48 db hearing loss with bone conduction normal.

Hospital Course: On 2/11/69, the patient was taken to surgery where under general anesthesia, a tympanoplasty was performed on the left ear with incus transposition and removal of a cholesteatoma. The pathological report returned with findings consistent with a cholesteatoma with stapes super structure. Patient discharged in satisfactory condition.

Cases such as the above are not a rare phenomenon in the area of hearing problems. The child was referred to an otologist and the hearing evaluation was completed to determine the location of the pathology. This child will be followed post-operatively by the otologist and the audiologist to insure the success of the surgery, as well as the success of the hearing improvement.

There are several inexpensive screening audiometers available that are easy to use and can be a great asset to the practicing physician in his office. The following are examples of portable audiometers that are being used by private physicians in their office for *screening purposes only.*

A. Beltone Model 12 D
Beltone Electronics Corporation
4201 West Victoria Street
Chicago, Illinois 60646

B. Maico Model M.A. 2
Maico Hearing Instruments
Minneapolis, Minnesota 55435

The nurse can be easily taught to do the screening as part of the routine physical examination. Usually the screening test takes from 5 to 15 minutes depending on the cooperation of the child. It can be used effectively on children age four and upward.

Caution must be taken by the physician who uses an audiometer in his office. He must always remember that the results he obtains is for referral use only. He has merely established the fact that the child does have a hearing problem. He does not know whether it is conductive (outer middle ear) or sensori-neural, or a mixture of both. Only a trained audiologist who has the knowledge of the audiometer, the purpose of the tests he is giving, the anatomy and physiology of the ear pertaining to hearing loss can establish the sight of lesion and the degree of hearing loss.

Conclusions

The general practitioner and the pediatrician are in strategic positions to make contributions to children with auditory disorders. Often they are the first specialist to encounter these children. Perhaps in the past, they have underestimated the importance of such signs as lack of response to sound and retardation of language development. If they are not aware of these symptoms and if they do not pursue a differential diagnosis accordingly, clarification of the child's problem might be greatly delayed. The pediatrician, the otolaryngologist, the neurologist, the child psychiatrist, the clinical psychologist, the audiologist, the speech pathologist, the teacher of the deaf, the educator, the social worker and many others can be expected to continue to make contributions to the understanding of these problems and to stimulate integration of professional services.

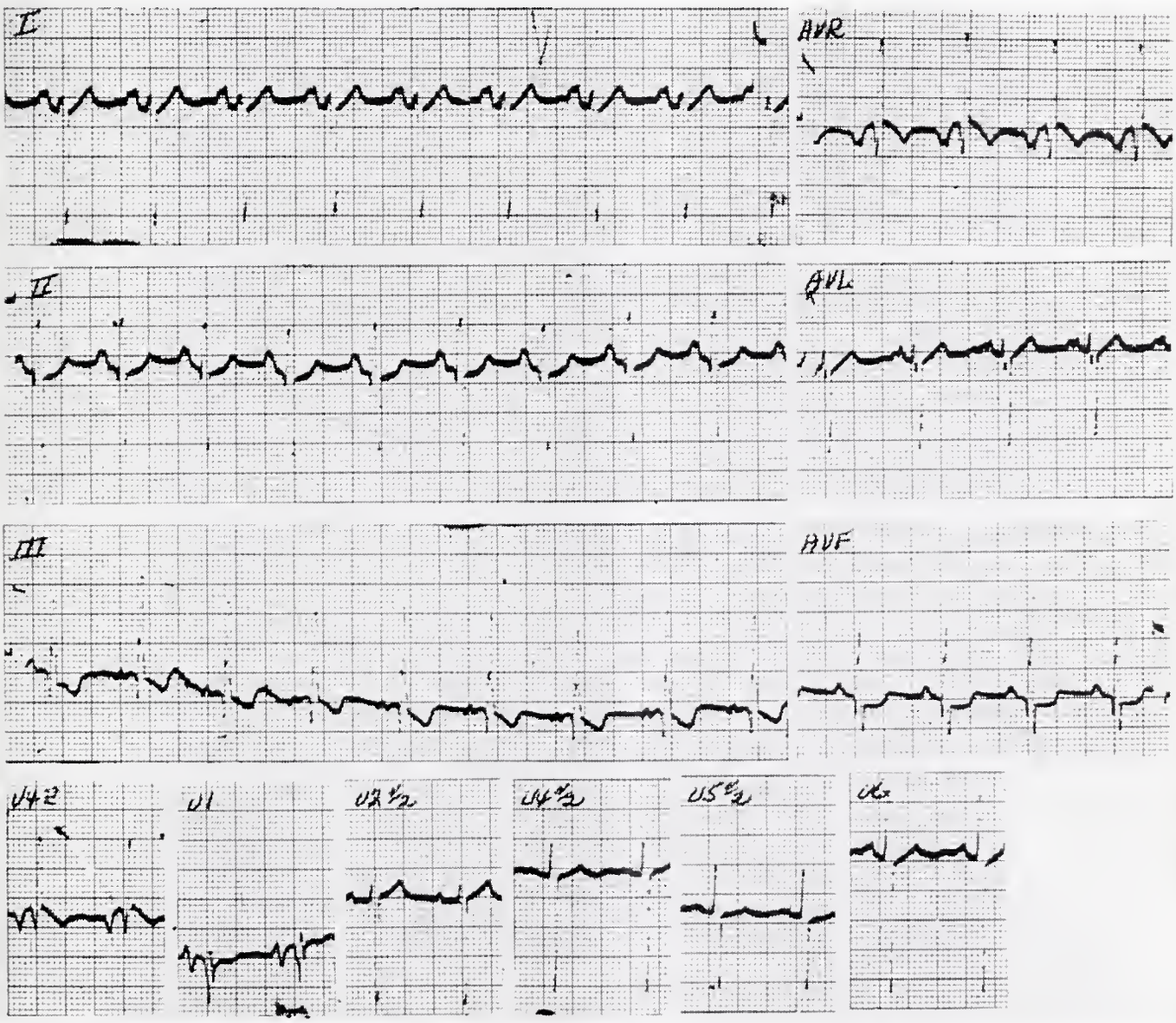
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2. Duffy, J. K.: "Hearing Problems of Infancy and Early Childhood," *Maico Audiological Library Series,* Report No. II, 1962.

ELECTROCARDIOGRAM OF THE MONTH

AGE: 9 SEX: Female BUILD: Slender BLOOD PRESSURE: 132/92
CARDIAC DIAGNOSIS: Congenital heart disease, type undetermined.
OTHER DIAGNOSES: Possible acute nephritis. Congestive failure.
MEDICATION: .25 mgm. digoxin daily.
HISTORY: Repeated episodes of congestive failure for 9 months.

SEE ANSWER ON PAGE 107



The Department of Medicine, University of Arkansas Medical Center
James S. Taylor, M.D., Professor of Medicine



WHAT IS YOUR DIAGNOSIS?

Prepared by the
Department of Radiology, University of Arkansas
School of Medicine, Little Rock

SEE ANSWER ON PAGE 107



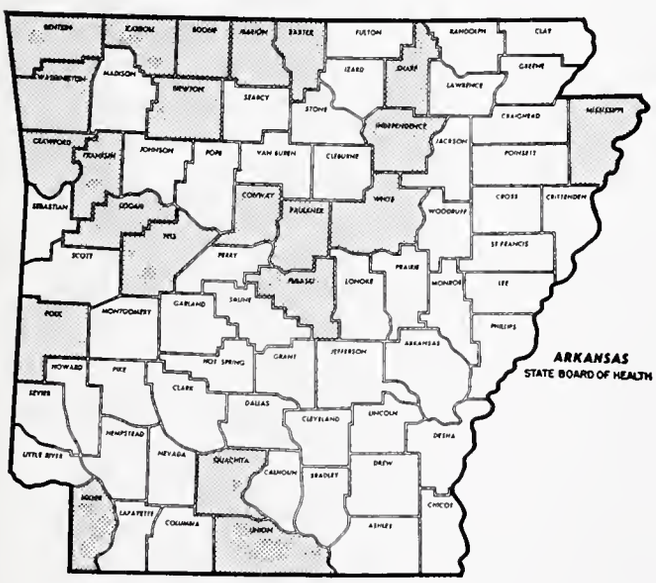
HISTORY: 3-year-old admitted with encephalopathy.

Rabies in Arkansas—1968

The State of Arkansas had a decided decrease in the number of animal rabies cases in 1968. At first glance this could be accepted as a real improvement in the rabies situation for the State. If you happened to live in one of four counties which reported from seven to ten positive cases of rabies, a statewide reduction provides very little satisfaction or comfort. Overall, Arkansas had a 43 percent reduction in the number of reported cases of animal rabies.

Northwest Arkansas reported the greatest number of cases of animal rabies. The distribution extended south into the counties of Crawford, Franklin, Logan, and Yell, with scattered cases being reported across the center of the State. In this area, the animal species most often reported as being positive for rabies was the striped skunk.

Counties Reporting One or More Cases of Animal Rabies in 1968



Shaded portions indicate counties which reported one or more cases of animal rabies.

The general make-up of the area consists of many small farms engaged in the production of livestock and poultry. These small farms appear to create a favorable environment conducive to the abundant propagation of the striped skunk. Any over-population of a particular animal species susceptible to the virus of rabies can create a similar rabies problem.

It is believed that the extensive use of antirabies vaccine has been a major factor in the protection of pet animals and man from rabies in Arkansas during the past year. This situation is further emphasized because only five pet animals were reported as having acquired rabies for the same period. The pets positive for rabies in 1968 were four dogs and one cat.

The reported number of animal bite exposures to humans in 1968 remained constant. The number of reported bites for 1968 were 1,124 as compared to 1,119 for 1967. In 1968, approximately 149 people received the duck-embryo rabies vaccine for treatment purposes because of exposure to suspected rabid animals. There were no severe adverse reactions reported by individuals from the use of the duck-embryo rabies vaccine.

The passage of the Rabies Control Act, Act 11—1968, was real progress in the battle against animal rabies in Arkansas. For the first time in the history of the State, we had a legal directive for the effective control of all animals suspected of having rabies, which also defined accepted management procedures for human exposures.



EDITORIAL

Studies On Angina Pectoris And Postural Hypotension

Alfred Kahn, Jr., M.D.

Angina pectoris is not completely understood despite better methods and instruments for cardiac research. Fallen, Elliott, and Gorlin have studied "The Mechanisms of Angina In Aortic Stenosis" (Circulation, Volume 36, page 480, October, 1967). These investigators report that angina is present in 35% to 50% of the patients with aortic stenosis, and 20% in cases of aortic stenosis without "morphological evidence" of coronary disease. They studied 18 patients: seven with aortic stenosis with angina pectoris called Group A, five with aortic stenosis and angina called Group B, and six patients with aortic stenosis and evidence of coronary disease by coronary arteriography called Group C. The patients were given isoproterenol intravenously; this normally causes the venous oxygen content to increase the coefficient of oxygen extraction decreases, and coronary vascular resistance decreases. These usual reactions were not observed in the cases of aortic stenosis with angina pectoris and no angiographic evidence of coronary artery disease, but they did occur in the cases of aortic stenosis with angina and aortic stenosis plus coronary artery stenosis. The results of the studies indicated that in "Group A coronary flow increased normally, myocardial oxygen extraction decreased, and myocardial lactate production occurred in only one of seven patients. This suggested energy supply was generally adequate to meet demand." Group B had decreased coronary reserve manifested by no increase in coronary flow, increased oxygen extraction, and abnormal glycolysis. Group C showed only one abnormality: lactate metabolism; the coronary flow increase and oxygen extraction decreased normally. The authors state this indicates evidence of regional ischemia.

Regional myocardial blood flow has been studied using radiokrypton and reported by Sullivan, Taylor, Elliott, and Gorlin in The Journal of Clinical Investigation (Volume 46, page 1402, September, 1967). The clearance of 85 Kr was studied by injecting this substance into the myocardium along with 0.3 cc of normal saline. A scintillation probe was then used to take counts over this area; the time of clearance of the radio-activity from the injected could then be ascertained. Animals were first studied using normals, and then animals with clamped coronary arteries or naturally occurring scars. Later patients who were undergoing thoracotomy for various reasons were studied; all subjects had undergone cine coronary arteriography. The authors found that radiokrypton clearance fell to zero when the coronary blood flow to the area was occluded and the clearance rapidly recurred when the blood supply was permitted to perfuse the area. Clearance constant in humans with normal myocardium was 2.28 ± 0.454. Clearance constants in areas supplied by diseased coronary arteries fell below the range of 1.37 — 3.19. The clearance constant was reduced "below the range observed in subjects without coronary disease in all but two subjects." These studies prove an uneven distribution of myocardial blood flow in the presence of coronary artery disease. They suggest that the procedure of implanting the internal mammary artery into an ischemic area of myocardium increases the development of

communicating vessels unless the implanted vessel is put into a scarred area, which seems an ineffective procedure.

Orthostatic hypotension has gained more recognition in recent years due to the widespread use of hypotensive drugs which may induce this condition. There is an idiopathic form of orthostatic or postural hypotension. Goodall, Harlan, and Alton studied seven cases of idiopathic hypotension (Circulation, Volume 36, page 489, October, 1967). They report that the cause is a disorder of the autonomic nervous system, and that the hypotension is often associated with poor arteriolar constriction, anhidrosis, sexual impotence, fixed heart rate, loss of bladder function, and often diarrhea. In these cases, there is a disordered metabolism or noradrenalin, the neuro-humoral chemical found widely in the nervous system. Noradrenalin was measured in the 24-hour urine output of these seven patients and was found to be reduced. Radio-active noradrenalin was injected into five of the subjects and its metabolism was found to be slowed mildly. The authors feel that the defect in orthostatic hypotension is inadequate manufacture or release of noradrenalin. They further feel that there is an anatomic defect in the efferent sympathetic neurons which could explain the deficient output of noradrenalin. With a decreased supply of noradrenalin, the arterioles in some would not constrict properly when the upright posture is assumed; this would lead to pooling of blood in the dependent areas and thus lead to hypotension.

ANSWER—What's Your Diagnosis?

DIAGNOSIS:

Chranic heavy metal paisaning.

X-RAY FINDINGS:

Broad bands of increased density are present in the metaphyses of the long bones visualized, findings characteristic of chranic heavy metal poisaning.

ANSWER—Electrocardiogram of the Month

RATE: 100 RHYTHM: Sinus

PR: 0.13 sec. QRS: .07 sec. QT: .2B sec.

SIGNIFICANT ABNORMALITIES:

Abnormal right axis deviation.

Delay in intrinsicaid deflectian, right.

INTERPRETATION: Abnarmal

Right ventricular hypertraphy.

MEDICINE IN THE NEWS

THE MONTH IN WASHINGTON

Washington, D. C.—Health, Education and Welfare plans to impose Blue Shield schedules for physicians under Medicaid and to limit payments to hospitals under Medicaid and Medicare drew strong responses from the American Medical Association and the American Hospital Association.

Dr. Dwight L. Wilbur, president of the AMA, urged in a letter to Robert H. Finch, HEW Secretary, that all segments of the health care field be consulted in effecting economies in government-paid health services.

"The American Medical Association is eager to make available to your office the composite experience and judgment of the nation's physicians, who are the principal providers of health care to all the people," Dr. Wilbur said. "The needs and problems of patients in all walks of life, at all income levels, come to their attention, in composite, more than a billion times a year."

"It has always been a principle of both the humanity and the professional code of the physician that no one shall ever be denied quality health care because of his inability to pay. The present concern is how this universal care can best be provided within a viable economic system and in the face of burgeoning demand for medical manpower, services, and facilities. . . ."

"The knowledge and judgment of the nation's physicians—as well as of the prepayment plans, health insurance industry, hospitals, the allied health professions, the actuaries and others—must be enlisted in your battle against the health care portion of the inflation problem."

Dr. Wilbur wrote Finch following the HEW announcement that Federal spending on the Medicaid-Medicare programs would be trimmed by $328 million through imposing Medicaid fee schedules based on prevailing Blue Shield rates, limiting mental illness benefits under Medicaid and cutting down hospital overhead allowances in Medicaid and Medicare.

"It is important to recognize that there are many variables in the circumstances of payment for medical and hospital services," Dr. Wilbur said. "Local needs and resources, the educational and motivational levels of the people, the economic conditions of the state and the community are among the reasons for the differences exhibited by the payment patterns of the Blue Shield plans and health insurance companies."

"These circumstances must be the foundation for any policies involving cost and payments. No universal pattern—no matter how many variations it may try to provide—can be imposed on the thousands of localities without wreaking havoc and probably increasing inefficiency and costs."

Concerning the imposition of Blue Shield rates as fee schedules under Medicaid, Dr. Wilbur warned in an address before the American Society of International Medicine in Chicago that a later step "might be that of physicians in groups on salary and abandonment of the fee-for-service principle." He said that physicians, in combatting such government efforts, must accept the major responsibility of keeping fees as moderate as possible.

The American Hospital Association protested in a letter to President Nixon against removal of the two percent overhead allowance for hospitals. Officially representing the AHA, Ray R. Eppert, Detroit, Mich., hospital trustee, said in a memorandum accompanying the letter to Nixon:

"The recent announcement of a reduction in Medicare reimbursement poses a serious threat to institutional integrity and, therefore, to the ability of hospitals to serve the sick and injured of this nation. Hospitals have been repeatedly assured at the highest levels of government that Medicare changes would not be made without consultation with their designated representa-

tive, the American Hospital Association."

"The AHA has tried repeatedly but unsuccessfully to meet with Secretary Finch. It is incredible that the Federal government would propose, without any consultation, removal of the two percent allowance which is a proper component of reasonable costs guaranteed under the law as passed by the Congress."

"The department apparently deemed it unnecessary to consult with the hospital field, and, as far as can be determined, made no serious study of the effect of the proposed reduction on hospitals. Payment of nothing but raw costs will lead . . . to the serious under-financing of our hospitals."

* * *

Drug combinations became the target of the Senate Small Business Subcommittee's investigation of the prescription drug industry.

Medical school professors critical of drug combinations were called as witnesses in two days of hearings opening this phase of the drug industry probe which began nearly two years ago. It was not indicated when, or even whether, drug company representatives would have an opportunity to defend their combination products before the subcommittee.

Dr. Heinz F. Eichenwald, a National Academy of Science drug specialist, told the subcommittee that "misleading advertising" had lured "the gullible physician" into prescribing useless and sometimes dangerous drug combinations. He also said continued use of drug combinations "amounts to a strong indictment of the ability of many physicians to judge what is effective and what isn't."

Dr. Eichenwald, pediatrics chairman at the University of Texas Southwestern Medical School in Dallas, and Dr. William M. M. Kirby, a medical professor at the University of Washington Medical School in Seattle, testified on the opening day of hearings on combination drugs conducted by the subcommittee which is headed by Sen. Gaylord Nelson (D., Wis.).

The two physicians were among 30 drug experts who evaluated combination drugs for the National Academy of Science. The experts' unanimous report said the combinations were useless and sometimes dangerous.

The report caused the U. S. Food and Drug Administration to serve notice April 2 that the 78 combination drugs studied by the scientists would be banned from the market unless drug makers could prove the Academy studies were wrong. Drug companies are fighting the FDA order as to many of the combinations that would be banned.

Eichenwald and Kirby both testified that doctors are widely prescribing the combinations despite numerous warnings of their potential danger.

Eichenwald said drug firms point to the admittedly widespread use of combinations to state that physicians must therefore have demanded them.

"The opposite is true," Eichenwald's prepared testimony said. "The demand was created by misleading advertising."

In another action, Nelson (D., Wis.) urged the FDA to restrict cyclamate-sweetened products to a prescription-only basis.

In a letter to FDA, Nelson said, "Tens of millions of children and adults across the nation are unwittingly being exposed to potentially serious health hazards by the unnecessary consumption of cyclamate-sweetened soft drinks, cereals, desserts, and 'sugar' coated pills."

He added, "Increasing scientific evidence indicates that cyclamates can cause chromosome breakdown, the birth of undersized offspring in animals, interference with effectiveness of certain antibiotics, persistent diarrhea, liver diseases, skin irritation and eruption, difficulty with blood clotting, and high blood pressure."

Cyclamate was originally developed as a sugar substitute for diabetics and others forced to restrict their intake of sweets. The FDA recently proposed regulations on labelling and ingredient content for cyclamate, often used now as a general substitute for sugar.

* * *

The Joint Commission on Mental Health of Children is recommending a broad program aimed at bettering the health of the nation's children and youths at an estimated cost of $6 billion to $10 billion a year.

The Commission recently disclosed its recommendations to the annual meeting of the American Psychiatric Association in advance of its report to Congress. The 54-member commission, which has completed a three-year $1.5 million study, was established by Congress in 1965.

Sen. Abraham A. Ribicoff (D., Conn.), who introduced the legislation to set up the committee, said he would promptly introduce legis-

lation to carry out the commission's recommendations.

The recommendations included national health insurance for persons up to 21 or 25 years old; family planning and birth control; prenatal care; pediatric care for children up to age of three, and physical and mental health services for older children.

Other recommendations:

—Federal funding for about 100 child development councils to help guide families through the confusion of government agencies in order to insure diagnostic, treatment and preventive services for children.

—Appointment of a Presidential council of advisers on children and youth, similar in position and prestige to the Council of Economic Advisers.

—Establishment of state commissions and local authorities on child care.

—Federal financing of about 10 evaluation centers to consider the working of the child development councils.

—Publicly supported day care available for all children.

—Federal funds for training child health and welfare personnel.

—Tax incentives to induce people to service in slum areas.

Dr. Reginald S. Louri, Washington, D. C., psychiatrist, is chairman of the joint commission.

Nixon, in a Feb. 19 message to Congress, said:

"So crucial is the matter of early growth that we must make a national commitment to providing all American children an opportunity for healthful and stimulating development covering the first five years of life."

* * *

The chairman of the AMA Committee on Alcoholism and Drug Dependence estimated that five percent of U. S. college students have tried LSD and 20 percent of high school and college-age youths have experimented with marihuana and other hallucinogenic drugs.

The chairman, Dr. Henry Brill of West Brentwood, Long Island, N. Y., made the estimate in testimony before the Senate Health Subcommittee.

"And," he added, "although no accurate count has been made, there are signs that the abuse of heroin and other so-called 'hard' narcotics is spreading into the suburbs."

Dr. Brill told the subcommittee that the nation's physicians increasingly "are being called upon to treat patients with drug problems, and to give counsel to anxious and bewildered parents who are discovering that 'it can happen' to their sons and daughters."

He emphasized the need for more research in the narcotics field.

* * *

THE MONTH IN WASHINGTON

Washington, D. C.—The American Medical Association has offered to cooperate in a Senate investigation of large Medicare and Medicaid payments to physicians and other health practitioners.

The offer followed a Senate speech by Sen. John J. Williams (R., Del.) in which he reported that the staff of the Senate Finance Committee had found that several thousand doctors, dentists and others had received $25,000 or more for their services under the two government programs in 1968.

In a second Senate speech, Williams expressed appreciation for the AMA offer to cooperate.

"This is the type of cooperation we need, and I appreciate this support from the American Medical Association," Williams told the Senate. "I sincerely hope that we shall have similar pledges of support from representatives of the other groups affected."

"I can assure each of these groups that our study will not result in a blanket indictment against any segment of the industry involved. We fully recognize that the overwhelming percentage of those who are in any way connected or working with this program are trying to do a good job; however, when instances of exploitation or excessive charges are discovered they must be exposed and properly dealt with."

Williams, who has announced he will not seek re-election next year, is a member of the Senate Finance Committee which is making an extensive study of the operation of Medicaid and Medicare.

Williams said that, although a staff report would not be ready until later this summer, the committee's investigation already had shown:

"First, in 1968 the Medicare program paid $25,000 or more to each of at least 5.000 physicians.

Second, thousands of health practitioners—doctors, dentists, optometrists, and others—were

each paid $25,000 or more under the welfare health care programs in 1968. . . . A surprising note is the large number of dentists appearing on the lists from welfare agencies. . . ."

"Data has also been gathered and detailed tables prepared comparing the average Medicare payments for the most common surgical procedures for older people with the maximum payments allowed under the most widely held Blue Shield contract in the same geographical area."

"The results are startling. Medicare's average payments run as much as two to four times as high as Blue Shield maximums. For example, in two areas of the country Medicare's average payment for a cataract operation is more than four times as much as the Blue Shield allowance. These are not isolated cases. There is a pronounced pattern of inflated payments by Medicare."

The report to the committee will include pinpointing the causes underlying these extremely generous handouts of public funds.

"Another unusual situation has occurred in Social Security's pressing carriers to pay for so-called supervisory services rendered by a teaching physician even though the actual care is provided by an intern or resident. Before Medicare virtually no insurer paid for such services. . . ."

"The investigation has expanded the evaluation of carrier and intermediary performance to determine whether the government is getting what it is certainly paying for and the extent to which intermediaries and carriers are carrying out specific functions assigned to them by the Medicare statute."

"Thus far a wide variance and level of performance has been observed. . . ."

The law requires intermediaries and carriers to exercise effective controls on utilization of services. . . .

"Yet some carriers and intermediaries appear virtually to ignore performance of this vital function while others seem to be doing a reasonably effective job."

Following Williams' first speech, the AMA issued a statement saying that it shared with the Senator a concern over the rising costs of Medicare and Medicaid. The Association offered to cooperate with the Senate Finance Committee or any other Congressional committee studying the problem of rising health care costs. The AMA earlier had made the same offer to Health, Education and Welfare Secretary Robert H. Finch.

The AMA statement said:

"For some time the AMA has been giving national leadership in coordinating the efforts of state and county medical societies in the establishment and effective functioning of local review and utilization committees checking on the health care services rendered under the Medicare and Medicaid programs. Close liaison also has been established between carriers and many medical societies in reviewing disbursements under the government programs."

"All investigations so far have indicated that an overwhelming majority of physicians participating in Medicare and Medicaid are charging reasonable fees. The charges of only about two percent of the physicians receiving payments from the programs have been challenged. Of course, the AMA favors appropriate action in any of the cases where physicians are found to receive improper payments. Last June, the AMA Board of Trustees urged all state and local medical societies 'to act swiftly and firmly in all instances of known exploitation, and excessive charges for health care that may occur in their jurisdiction.' In 1967, the AMA said, 'Any reports of abuses by physicians or by any other health care program should be thoroughly and promptly investigated and action taken where indicated.' Several medical societies have expelled members where it has been proved that a physician's charges were excessive or he in some other way exploited the program.

"The AMA, through its publications and speeches by its officials, has been emphasizing to physicians the responsibility they have to hold down the health care costs of their patients both under and outside government programs. In an April 17 letter to Finch, Dr. Wilbur said the AMA 'is eager to make available to your office the composite experience and judgment of the nation's physicians, who are the principal providers of health care to all the people.' "

"'The knowledge and judgment of the nation's physicians—as well as of the prepayment plans, health insurance industry, hospitals, the allied health professions, the actuaries and others—must be enlisted in your battle against the health care portion of the inflation problem," Dr. Wilbur said.

The House passed and sent to the Senate a three-year $937 million extension of the Hill-Burton Act under which the Federal government has helped finance construction of hospitals and nursing homes with 425,000 beds.

Members approved the measure on a 351 to 0 roll call after turning down a series of amendments designed to channel the matching hospital grants more into big cities than urban areas and into modernization rather than new hospital construction.

In addition to extending existing aid, the bill provides new loan guarantees, as requested by the Nixon administration, and interest subsidies, which the administration opposed.

The bill as passed authorizes appropriations (over three years) up to $405 million for hospital construction; $165 million for modernization; and $300 million in guaranteed loans, toward which the government would contribute up to $37 million in three percent interest subsidies. In addition, grants up to $30 million could be made for emergency room modernization.

* * *

The American Medical Association urged that Congress approve full appropriations for medical education programs.

Dr. C. H. William Ruhe, director of the AMA's Division of Medical Education, testified before a House appropriations subcommittee that the nation's urgent need for more physicians could "only be met effectively by a major increase in the capacity of American medical schools to educate more physicians."

"It is therefore appropriate to emphasize again that full funding in the amounts authorized by the Health Manpower Act of 1968 is necessary to permit the construction of new and expanded facilities before major enrollment increases will be feasible," Dr. Ruhe said.

In a letter to the House Public Health and Welfare Subcommittee, the AMA also supported extension of the Medical Library Assistance Act. Dr. Ernest B. Howard, AMA executive vice-president, said that "we cannot exaggerate the importance to the health professions and the public they serve" of the many beneficial services supported through the programs.

* * *

President Nixon created the cabinet-level Environmental Quality Council to begin a major attack on pollution of the environment. He also named a companion 15-member Citizens' Advisory Committee on the recommendations of Lee A. Dubridge, Ph.D., his chief science adviser.

The President said the council, serving as an advisory board on a par with the National Security Council and the Urban Affairs Council, "will provide the focal point for this administration's efforts to protect all of our natural resources."

Dubridge said, "The problem is how we can make maximum use of our environment . . . without despoiling it." He said the council would move promptly on the problems of disposal of waste products—a key factor in deterioration of the environment.

The President will head the council, which also will include the Vice-President and the Secretaries of Agriculture, Commerce, Health, Education and Welfare, Housing and Urban Development, Interior, and Transportation.

Laurence S. Rockefeller, one of the nation's leading conservationists and a key figure in Lady Bird Johnson's National Beautification Campaign, will be chairman of the Citizens' Advisory Committee.

* * *

FIRST "ATHLETIC INJURIES" SYMPOSIUM HELD

The first annual Red-White symposium on "Athletic Injuries" was held May 2, 1969, at the University of Arkansas under the sponsorship of the sub-committee on School Health and Physical Fitness. An enthusiastic group of physicians, trainers, and coaches were warmly greeted by Coach Frank Broyles, who urged involvement of the physicians throughout the state in the athletic programs in their communities. He greatly supported their efforts in, not only appropriately treating athletic injuries, but in prevention of these injuries as much as possible.

Dr. Coy Kaylor of Fayetteville, who arranged the program, presided and introduced Dr. Kenneth Jones of Little Rock, who discussed injuries to the knee; Dr. Hoyt Kirkpatrick of Fort Smith, who discussed injuries to the shoulder; Dr. Tom Coker of Fayetteville then discussed injuries to the ankle and foot.

After the usual mid-morning coffee break, trainer Jim Bone of the University staff, with the aid of an injured Razorback, demonstrated the use of the "Universal Gym" in the rehabilitation of injuries.

Dr. Carl Kendrick of Fayetteville then completed the formal program discussing injuries to the head and neck, as well as heat and fluid maintenance.

The group was treated to an exceptional luncheon at Darby Hall, followed by a "meat and taters" panel discussion and question period concerning topics discussed in the morning session. The symposium then adjourned to the equipment and training room just prior to the football game as the athletes were preparing for the Red-White ball game.

The committee is already planning a similar meeting next year in association with the Little Rock Red-White football game. This will be jointly sponsored by the University of Arkansas Athletic Department, Arkansas Athletic Association and the Arkansas Medical Society with the hope that it will become an annual affair.

* * *

LAW AND MEDICINE: ACTS OF 1969 GENERAL ASSEMBLY, A SHORT SUMMARY

Fifteen laws passed by the 1969 General Assembly are of particular interest. While this article is written in an attempt to convey basic changes in existing laws and/or new statutes to the physicians of the State, no definitive treatment of the subject-matter is intended. Quite simply, what follows below is meant only as a brief review, and any individual in need or desirous of further information is urged to seek the advice and counsel of an attorney.

Act 4, Anatomical Gift Act

Act 4 of 1969 is the Uniform Anatomical Gift Law and is an attempt to "comprehensively" deal with the legal problems encountered when using the human body or its parts for medical purposes. The summary offered here consists of asking five major questions raised when an anatomical gift is contemplated, followed by the "quick" or "in general" answer to each as contained in Act 4. Two other items of importance are then to be noted.

1. Question: Who may make an anatomical gift?

Answer: Any individual of sound mind and 18 years old or more. In the absence of contrary indications by the decedent, at the time of death the spouse, adult son or daughter, or either parent in that order of priority may make the gift. Further classifications of priority are set out in the Act. (See Section 2 of Act 4.)

2. Question: To whom can an anatomical gift be made?

Answer: Any hospital, surgeon, physician, accredited medical or dental school, college or university, "bank or storage facility," or a specified individual for therapy or transplantation needed by him. Any recipient must have as his purpose(s) medical or dental education, research, therapy, transplantation, or scientific advancement. (See Section 3 of Act 4.)

3. Question: How may a gift be revoked?

Answer: Execution and delivery of a signed statement by the donor to the donee; oral statement by the donor in the presence of two persons and communicated to the donee. (See Section 6 of Act 4.)

4. Question: What effect does the donor's gift have upon the rights of surviving relatives?

Answer: The terms of the gift give its recipient rights paramount to all others, subject to the laws of Arkansas concerning autopsies. (See Sections 2 (e) and 7 (d) of Act 4.)

5. Question: What effect does the donor's gift have upon the civil and criminal liability of the medical officer involved in the removal of any parts?

Answer: One who acts in good faith in accord with this Act is not liable for damages or subject to criminal prosecution. (See Section 7 (c) of Act 4.)

Attention is called to the fact that an anatomical gift can be made other than by a will, such as a signed statement witnessed by two persons, or by the telegraphic, recorded telephonic, or other recorded message of one qualified to "donate."

Finally, particular note should be taken of the Act's express prohibition of the attending physician at the donor's death or the physician certifying the death participating in the procedures for removing or transplanting a part. Effective date, January 23, 1969.

Act 8, Repeal of Blood Labeling Act

Act 8 of 1969 is a repeal of Act 482 of 1959 (Arkansas Stats. (1947) Sections 82-1601 and 82-1605). It no longer is necessary to label blood used in transfusions according to the race of the donor. Effective date, January 28, 1969.

Act 13, Motor Vehicle Inspection Act

Act 13 of 1969 amends the original act, see Arkansas Stats. (1947) Section 75-2103 (3), to allow 10, instead of 5, days in which to repair or

correct anything found out of order upon official inspection. Upon discovery of any disorder, no additional cost is to be assessed in obtaining the official certificate of inspection if the adjustment is made and returned to the same inspection site within ten days of the initial inspection. Effective date, January 30, 1969.

Act 17, Implied Consent

Act 17 of 1969 amends Arkansas Stats. (1947) Section 75-1031.1. The Act sets up certain presumptions as matters of law in any criminal prosecution of a person charged with driving a vehicle while under the influence of intoxicating liquor. They are:

1. 0.05 percent or less by weight of alcohol in blood, urine, breath, or other bodily substance—not under influence.
2. 0.05 percent but less than 0.10 percent—no presumption either way.
3. 0.10 percent or more—defendant presumed under the influence.

The method of chemical analysis used to determine the percentages mentioned above must, under Act 17, be approved by the Arkansas State Board of Health. Effective date, January 30, 1969.

Act 34, Sale or Use of Certain Compounds Prohibited

Act 34 of 1969 is directed at the dangers involved in "glue sniffing" and related practices. It makes the seller and/or user of the prohibited compounds subject to being charged with a misdemeanor which, upon conviction, can mean a fine of $100 to $200 or imprisonment for thirty days to six months or both. The seller is subject to the regulations of this law upon a showing that he had reason to believe the buyer intended to use the products for unlawful purposes.

Section 2 of Act 34 specifically exempts any person acting upon the direction or prescription of any licensed physician or dentist authorized to so direct or prescribe.

Prohibited compounds are any containing: (1) toluol, (2) hexane, (3) trichloroethylene, (4) acetone, (5) toluene, (6) ethyl acetate, (7) methyl ethyl ketone, (8) trichoroathane, (9) isopropanol, (10) methyl isobutyl ketone, methyl cellosolve acetate, (11) cyclohexanone. Effective date, February 6, 1969.

Act 61, Abortion Law

Act 61 of 1969 provides for the performance of legal abortion where certain conditions are met. First, the pregnant woman, or her proper representative, must give written consent, and she must have resided in the State no less than four months immediately preceding the operation. The physician must reasonably establish at least one of three conditions as justification for the operation. They are: (1) that continuancy of the pregnancy would threaten the life or health of the woman; (2) that substantial risk exists of the child being born with grave physical or mental defect; or (3) that the pregnancy resulted from rape or incest which was reported to the prosecuting attorney within seven days of the alleged act. The operation must be done only in a properly licensed hospital after first filing with the hospital a written certification of the circumstances believed to justify the operation. The certificate must be signed by the doctor who is to perform the abortion and two other physicians not engaged jointly in private practice. Effective date, February 17, 1969.

Act 87, Hospital Utilization Committees

Act 87 of 1969 makes physicians and others serving on hospital utilization review committees immune from liability for their good faith decisions relating to Medicare patients. Effective date, February 21, 1969.

Act 198, Medical Information and Utilization Committees

Act 198 of 1969 broadens the immunity grant of Act 87 in that it protects members of hospital utilization review committees from liability with respect to decisions made in good faith for the purpose of determining optimum use of hospital services vis-a-vis any patient.

The Act also grants proper authorities power to provide medical data (except original patient records) to any valid medical research effort aimed at reducing morbidity or mortality without liability. Effective date, March 7, 1969.

Act 100, Treatment of Minors for VD

Act 100 of 1969 makes a minor's consent to treatment binding upon him when he gives such, believing himself afflicted with a venereal disease. The physician may, but is not obligated legally to, inform the minor's parents or guardian. If the physician elects to inform the parents or guardian, he may do so without the consent and over the express objection of his minor patient. This law is now in effect.

Act 106, Drunken Driver: Chemical Tests

Act 106 of 1969 provides that a person who

operates a motor vehicle in this State who is alleged to be so doing while under the influence of liquor is deemed to have given consent to a chemical analysis of his blood, breath, or urine. If such a person refuses to submit to the test, his license can be revoked for six months. Effective date, February 25, 1969.

Act 168, Inhalation Therapy Board

Act 168 of 1969 defines and regulates inhalation therapy. The Act is administered by the Arkansas State Medical Board with the advice and assistance of the Inhalation Therapy Examing Committee which is created by this law. The committee must include one board certified Anesthesiologist and one Fellow of American College of Chest Physicians. They are appointed by the Governor upon the recommendation of the State Medical Board. The three other members are to be therapists licensed under this Act and are also appointed by the Governor.

Act 173, Drug Registration

Act 173 of 1969 is an effort to tighten control of the traffic in stimulant and depressant drug sales. This law requires "wholesalers" of such drugs to register with and obtain a permit from the State Board of Pharmacy. "Wholesaler" means anyone or any firm who sells in the State or ships into the State for sale stimulant or depressant drugs. The offering for sale through advertisement is also made unlawful unless the proper permit has been issued. Effective date, March 5, 1969.

Act 197, Hearing Aid Dispensers Board

Act 197 of 1969 was enacted because the General Assembly found that members of the public were being injured as a result of the fitting and dispensing of hearing aids by unskilled persons holding themselves out as experts. This Act creates the Board of Hearing Aid Dispensers and an advisory council and charges the Board with the responsibility for the examination and licensure of applicants and general regulation of the fitting and dispensing of hearing aids. Violation of this law can result in both a fine and imprisonment. Effective date, March 7, 1969.

Act 225, Standards for Impact Lens

Act 225 of 1969 compels the seller of all eye glasses sold in the State to furnish the purchaser at the time of sale or delivery some kind of label indicating the lens as impact resistant or as non-resistant.

To be resistant, glass lens must be able to withstand the impact of a five-eighths inch steel ball dropped from a height of fifty inches. Plastic materials must be no more flammable than the characteristics exhibited by cellulose acetate or acetate butyrate. Effective date, March 10, 1969.

Act 305, Comprehensive Health Planning Agency

Act 305 of 1969 creates the agency mentioned in its title and makes it the official instrument for state health planning functions. This agency, composed of a director and a thirty-six man advisory council appointed by the Governor, is the recipient and administrator of all federal funds made available under the provisions of Public Law 89-749 of the 89th Congress.

OBITUARY

Dr. Joy Kenneth Donaldson

Dr. Joy Kenneth Donaldson of Little Rock died June 11, 1969. He was born in 1906 in Green Forest.

Dr. Donaldson graduated from the Tulane University School of Medicine at New Orleans in 1928, interned at the San Francisco General Hospital and was resident in surgery at Clifton Springs Sanatorium and Clinic at New York. In 1936 he came to Little Rock to establish private practice and to join the University of Arkansas School of Medicine's faculty as an associate professor of surgery. In service of the United States Army during World War II, Dr. Donaldson rose to the rank of lieutenant colonel and received two Bronze Stars. In 1958, he established the Donaldson Clinic and Hospital at Little Rock and retained his association with the School of Medicine as honorary associate professor of surgery until the time of his death. Dr. Donaldson was the author of a number of articles in national surgical journals and two editions of the textbook, Surgical Disorders of the Chest.

Dr. Donaldson was certified by the American Board of Surgery, a lifetime member in the American College of Surgeons and a member of the Pulaski County and Arkansas Medical Societies and the American Medical Association.

Survivors are his wife; a daughter, Mrs. Wil-

liam B. Lines of El Dorado; a brother, Paul B. Donaldson of Green Forest; and three grandchildren.

* * *

Dr. Samuel Paul McConnell

Dr. Samuel Paul McConnell of Booneville died June 20, 1969. He was born in 1882 and had practiced medicine in Booneville for the past 63 years.

Dr. McConnell attended both Hendrix College and the University of Arkansas prior to graduation from St. Louis University School of Medicine in 1906.

Dr. McConnell was a member of the Logan and Sebastian County Medical Societies, the Arkansas Medical Society and the American Medical Association.

Survivors include his wife, Ann, and a son, Air Force Chief of Staff, General John Paul McConnell.

Dr. Owen Hobson Clopton, Sr.

Dr. Owen Hobson Clopton, Sr., of Rector died June 3, 1969. He was born in February, 1886, near Penny, Kentucky.

Dr. Clopton graduated from Vanderbilt University School of Medicine in 1913 and had been a physician for 56 years, serving the Rector community since 1934. In 1963 the citizens of that community honored him by declaring the week of June 8-13 "Dr. Clopton, Sr., Week."

Dr. Clopton was a member and past president of the Greene-Clay County Medical Society and also a member of the Arkansas Medical Society, the Southern Medical Society and the American Medical Association.

Surviving him are his wife; one son, Dr. Owen H. Clopton, Jr., of Jonesboro.



PERSONAL AND NEWS ITEMS

Doctor Promoted

Dr. Nicholas W. Riegler, Jr., of Little Rock has been promoted to brigadier general in the United States Army Reserve.

Doctor Associates

Drs. A. R. Brown and H. C. Palmer, Jr., of the Medical Arts Center in Searcy have announced that Dr. David M. Johnson will be associated with them. His practice will be limited to internal medicine.

Doctors Elected

The Arkansas Chapter of the American College of Surgeons recently elected Dr. William G. Cooper of Little Rock as president-elect; Dr. Porter Rodgers, Jr., of Searcy was secretary-treasurer, and Dr. James Stuckey of Little Rock as governor at their meeting of June 20-22 on Eden Isle.

Dr. Evans Made Director

Dr. C. L. Evans of Morrilton has been elected as member of the Board of Directors of the Arkansas Heart Association.

Doctor Locates

Dr. Raymond E. Buirge has recently begun practice in Mountain Home. He is a graduate of the Duke University School of Medicine, Durham, North Carolina.

Dr. Thomas Presides

Dr. H. W. Thomas of Dermott, president of the Arkansas Caduceus Club, presided at the first alumni weekend held in the Jeff Banks Student Union at the University of Arkansas Medical Center in Little Rock, June 6-8.



J. P. Price, M.D.

Dr. J. P. Price was elected First Vice President of the Arkansas Medical Society at the organization's recent annual convention.

Dr. Price was born in Cornerville, Arkansas, in 1907 and began his formal education at Arkansas A. and M. College at Monticello. After attending the University of Tennessee, he graduated from the University of Arkansas School of Medicine in 1933 and also interned in Little Rock at the University Hospital. Since 1934, Dr. Price has been a resident of Monticello where he has been engaged in the general practice of medicine and surgery.

To this new position, Dr. Price brings a long record of experience and service in both professional and civic affairs. In the past, he has served the Arkansas Medical Society as its Vice President and also its Speaker of the House of Delegates. From 1947 to 1959, Dr. Price was on the State Board of Health and, since 1950, has held the title of Senior Fellow of the Southwest Surgical Congress. In addition, he served as both Vice President and President of the Mid-South Postgraduate Medical Assembly. Currently he is Chairman of the Board of Trustees of Arkansas A. and M. College, Monticello.

Dr. Price is married to the former Anna Corrine Beasley and they are the parents of one daughter, Mrs. Ann Clark of Pine Bluff.

Dr. and Mrs. Price are members of the First Presbyterian Church of Monticello where he is an Elder and former Chairman of the Board of Deacons.



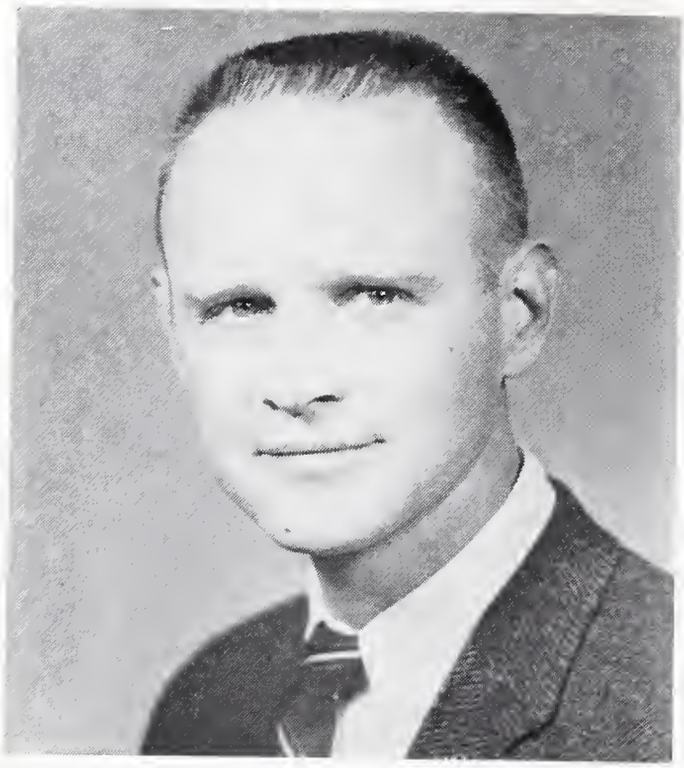
Dr. Dwight W. Gray, M.D.

Dr. Dwight W. Gray was elected to a two-year term as councilor from the Third Councilor District at the 1969 convention of the Arkansas Medical Society. His district includes Arkansas, Cross, Lee, Lonoke, Monroe, Prairie, St. Francis, and Woodruff counties. Dr. L. J. P. Bell of Helena is his fellow councilor from those counties.

Born and reared in Faulkner County, Dr. Gray served three years with the United States Navy during World War II. Upon completion of his tour of duty, he entered the University of Arkansas and by 1949 had completed both the B.S. and M.A. degrees, with his graduate work done in Zoology. Graduating from the University of Arkansas School of Medicine, class of 1953, Dr. Gray interned at St. Vincent Infirmary and then completed a residency at the E. A. Conway Memorial Hospital in Monroe, Louisiana.

In 1955, Dr. Gray settled in Marianna and has continued in general practice there until the present. He has been president of the Lee County Medical Society and also its representative to the House of Delegates. In choosing a place to locate, Dr. Gray stated, "The wonderful people and good fishing were definitely not the least factors in my decision to live and work in the Third District area."

Dr. Gray and his wife, Alpha, are members of the Christian Church in Marianna. He is also a member of the local Masonic Lodge.



Dr. James C. Bethel

Dr. James C. Bethel of Benton was elected to the position of councilor at the Annual Session in Hot Springs. Dr. Bethel represents the seventh district, the counties of which are Clark, Garland, Grant, Hot Spring, Montgomery, and Saline.

He attended public schools in Fayetteville. During World War II, he served with the United States Navy (1945-47). In 1951, he received a B.S. degree from the University of Arkansas. Dr. Bethel was graduated from the University of Arkansas School of Medicine in 1954. He interned at the University Hospital.

Upon completion of his internship, Dr. Bethel established a general practice at Piggott. The next year, he relocated in Bauxite and practiced there until 1961. He then spent two years with the R. J. Reynolds Tobacco Company in Winston-Salem, North Carolina.

Dr. Bethel returned to Arkansas in 1963 to practice at Benton.

With the exception of the two years in North Carolina, Dr. Bethel has been, since 1956, secretary-treasurer of the Saline County Medical Society. He also served as his society's delegate to the Arkansas Medical Society House of Delegates for the same period of time.

Dr. Bethel was president of the Saline County Medical Society and is chief-of-staff of the Saline Memorial Hospital in 1968-69.

In 1957, Dr. Bethel married the former Pauline Reed of Bauxite. They have four children—Reed, 10; Claudette, 9; John, 5; and Justin, 3. The Bethels are members of the First Presbyterian Church of Benton.

* * *

Dr. Taylor Honored

Dr. James S. Taylor became Professor Emeritus of the University of Arkansas School of Medicine on July 1, only the third teacher to receive the title since the school's founding in 1879. At a surprise dinner party in late May, given by former students and fellow faculty, Dr. Taylor received an electric typewriter and learned that a department library on cardiology will be established in his name. Dr. Taylor is the author of "Electrocardiogram of the Month" interpretations for this Journal.

Dr. Deneke Is Speaker

Dr. Milton D. Deneke, Crittenden County health officer, discussed heart disease at the June 3 meeting of the West Memphis Lions Club.

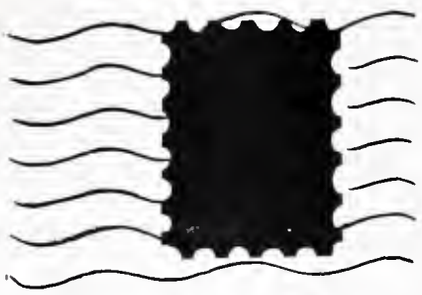
Dr. Massey Reports to Kiwanis

Dr. L. D. Massey reviewed for his fellow Osceola Kiwanians at their June 5 meeting the serious doctor shortage in the country and reported upon the work and progress of the Future Physicians Club of Osceola High School in attracting young people of the locale in medical careers.

Dr. Briggs Honored

Dr. Barney P. Briggs of Little Rock recently was presented the Physicians Courtesy Award by the Pulaski County Pharmacists Association for his courtesy, cooperation and active role in the interprofessional relations of pharmacy and medicine.

LETTERS



TO THE EDITOR

To the members of the Arkansas Medical Society:

The family of Dr. Samuel Paul McConnell wishes to express deep gratitude for the honors bestowed upon the doctor by the Arkansas Medical Society during his lifetime and for the memorial contribution to the Ilse F. Oates Student Loan Fund to assist medical students in obtaining their professional education.

Anne McConnell



NEW MEMBERS

The Pulaski County Medical Society recently added DR. GLENN V. DALRYMPLE as a member. Born in Little Rock, Dr. Dalrymple obtained his B.A. degree at North Texas State University in 1954. Upon graduation from the University of Arkansas School of Medicine in 1958, he interned at the Medical Center and then completed his residency in Radiology at the University of Colorado Medical Center in Denver.

Dr. Dalrymple is an Associate Professor of Radiology, Biometry, Physiology, and Biophysics at the University of Arkansas School of Medicine in Little Rock. He holds memberships in the American College of Radiology, Biophysical Society, Sigma Xi, and the Society of Nuclear Medicine.

The Ashley County Medical Society announced the addition to its membership the name of DR. GERALD WAYNE JOHNSON of Crossett. After receiving his pre-medical education from Louisiana Tech in Ruston, Louisiana, Dr. Johnson became a graduate of the University of Arkansas School of Medicine in 1966. He interned at the Arkansas Baptist Medical Center in Little Rock.

Dr. Johnson currently is doing a residency in plastic surgery at Baylor Medical Center, Houston, Texas.

* * *

The Sebastian County Medical Society has admitted to its membership, DR. DONALD SELDON CHAMBERS. A native of Little Rock, Dr. Chambers graduated from the University of Arkansas, B.A., 1957, and from the School of Medicine in Little Rock in 1961. After interning at Flower Hospital, Toledo, Ohio, he did residency work at Washington University School of Medicine, St. Louis. Since November, 1968, Dr. Chambers has been in the practice of Psychiatry at 1120 Lexington Avenue, Fort Smith.

* * *

The Sebastian County Medical Society also lists as another new member, DR. OTHEL LEO DAVENPORT. Dr. Davenport was born in Weeks, Arkansas. He received his pre-medical education from the University of Arkansas and became a graduate of the University of Arkansas School of Medicine in 1962. The University of Arkansas University Hospital was his place of internship, while residencies in Pathology were accomplished at the former and, subsequently, at the Anderson Tumor Hospital in Houston, Texas.

A member of the American Society of Clinical Pathologists, Dr. Davenport practices Anatomic and Clinical Pathology at 922 Lexington Avenue, Fort Smith.



BOOK REVIEWS

THE EVOLUTION OF PREVENTIVE MEDICINE IN THE UNITED STATES ARMY, 1607-1939, by Stanhope Bayne-Jones, M. D., Editor in Chief; Col. Robert S. Anderson, MC, USA, illustrated, pp. 255, published

by Office of the Surgeon General Department of the Army, Washington, D. C., 1968.

This short book is an excellent review of preventive medicine in the United States Army. It is well written and is of considerable historic interest. It is recommended as pleasant, informative reading to the medical profession.

MEDICAL SUPPLY IN WORLD WAR II, prepared and published under the direction of Lieutenant General Leonard D. Heaton, Editor in Chief; Colonel Robert S. Anderson, MC, USA, Editor for Medical Supply; Charles M. Wiltse, Ph.D., Litt. D., illustrated, pp. 662, published by Office of the Surgeon General, Department of the Army, Washington, D. C., 1968.

This volume from the medical department of the United States Army is of interest to suppliers of medical items. This information is related largely to military movements and there is very little of interest to civilian manufacturers or workers in this area.

The book is well written and well illustrated. It is recommended to people who are interested in military supply movements but not for ordinary lay consumption.



Indications and Results of Noble's Plication in Children

G. Brandesky and H. Hartl (Chirurgische Abteilung des Landes Kinderkrankenhauses, Linz, Austria)

Deutsch Med Wschr 93:2471-2474 (Dec 20) 1968

Noble's plication was performed in 31 children. Fixation of the last ileal loop to cecum and ascending colon and the use of nonabsorbable suture material were of particular importance. Total small intestinal plication was preferred to partial except in certain cases such as infants in poor general condition. The main indication for operation in children and adults is ileus due to adhesions. However, chronic invagination and certain cases of congenital rotational malformation with extensive membrane formation also are indications. Where the operation was technically satisfactory no complications were observed; there was no ileus recurrence. Re-examination one to 12 years after operation showed that the children had developed normally and were without symptoms.

A Limited Form of Wegener's Granulomatosis

J. Bernier (Hôpital Saint-Luc de Montréal, Montreal), R. Charbonnear, and F. Sestier

Un Med Canada 98:44-54 (Jan) 1969

A limited form of Wegener's granulomatosis occurred in a 28-year-old white man who had a recurrent left pleural effusion with left basal pulmonary consolidation. Positive serological tests seemed to indicate histoplasmosis. Failure to improve with antifungic drugs led to further investigation and thoracotomy, and the diagnosis of Wegener's granulomatosis was histologically established. After a five-month period on steroids, somewhat significant radiological improvement was noted. One month after withdrawal of steroids and 13 months after the onset of symptoms the patient is well. Clinical, radiological, pathological, and therapeutic features of this case are compared with those of a similar report on 16 cases of limited forms of Wegener's granulomatosis collected previously by Carrington and Liebow.

A New Canaliculus Irrigating Tip

C. B. Tulevech (635 Belle Terre Rd, Port Jefferson, NY)

Arch Ophthal 81:369 (March) 1969

A bevelled cannula, the tip of which extends approximately 3 mm beyond the tapered shoulder, permits the instrument to fit snugly into the punctum, thus preventing reflux. The irrigating solution can be injected through the system under pressure while the opposing punctum is occluded with the punctum dilator.

Vasopressin in Prevention of Lumbar Puncture Headache

H. Aziz, J. Pearce, and E. Miller (Hull Royal Infirmary, Leeds, England)

Brit Med J 4:677-683 (Dec 14) 1968

Double-blind controlled trial of aqueous vasopressin in the prophylaxis of lumbar puncture (LP) reactions was performed in 50 patients. The incidence of reactions was unaffected by vasopressin, but severe reactions appeared less frequently in the treatment group. Moderately severe side effects occurred in 26% of those receiving vasopressin. The results do not justify the routine use of vasopressin in the prevention of LP reactions; however, vasopressin may be of value in the treatment of severe reactions to LP, but this possibility requires further investigation.

September, 1969

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Vol. 66 No. 4

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As is characteristic af sympathomimetic agents, it may accasianally cause CNS effects such as insomnia, nervausness, dizziness, anxiety, and jitteriness. In cantrast, CNS depressian has been reparted. In a few epileptics an increase in canvulsive episades has been reparted.

Sympathomimetic cardiavascular effects reparted include ones such as tochycardia, precardial pain, arrhythmia, palpitation, and increased blaad pressure. One published report described T-wove chonges in the ECG af a healthy yaung male after ingestian af diethylprapian hydrochloride; this was an isolated experience, which has nat been reparted by others.

Allergic phenomena reported include such canditians as rash, urticaria, ecchymosis, and erythema. Gastraintestinal effects such as diarrhea, canstipatian, nausea, vamiting, and abdaminal discamfort have been reported.

Specific reports an the hematopoietic system include two each af bone marraw depression, agronulocytosis, and leukopenia.

A voriety of miscellaneaus adverse reactions have been reparted by physicians. These include complaints such as dry mouth, headache, dyspneo, menstrual upset, hair loss, muscle pain, decreased libido, dysuria, and polyuria.

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Determinants of Digitalis Dosage

James E. Doherty, M.D.*

Digitalis glycosides have been used by practitioners of medicine for thousands of years, and it has been nearly 200 years since Withering's[1] classic "Account of the Foxglove." Kinetic studies with digitalis glycosides utilizing radioisoptic techniques performed since World War II have greatly enhanced our knowledge of digitalis serum levels, turnover time, excretion, and localization in tissue. It will be the purpose of this paper to examine and apply this knowledge in the determination of appropriate dosage for digitalis in human subjects.

The major portion of this paper will concern itself with digoxin;* however, because of the initial studies with digitoxin and its wide clinical use and that of digitalis leaf, these products will also be examined.

I. Digitoxin and Digitalis Leaf

Digitalis leaf, the subject of the studies of Withering,[1] and its principal active glycoside, digitoxin, are frequently used as cardiotonic drugs.

Radioactive digitoxin was labeled biosynthetically with carbon-14 by Okita and his co-workers in 1948. Many publications regarding serum levels, excretion and tissue distribution followed.[2-7] This work gave us much insight regarding digitoxin and will be briefly reviewed.

Radioactive digitoxin was found to appear in the serum largely in the form of metabolites and, as reported by earlier workers,[8] to be largely bound to serum albumin. Serum turnover rates were noted to possess a half-time (the time required for one-half of the radioactivity originally present to leave the serum) of about 50 hours. The urine half-time was greater, about 9 days, and the kidney was noted to be the major organ of excretion. The disparity between the serum half-time and the urine half-time was explained by Okita as a result of undetected exponential functions and a possible difference in the rate of release by various binding sites in the body. Weissler[9] used systolic time intervals and determined the physiologic half-time of digitoxin to be about 5½ days, in keeping with clinical observations with the drug, a glycoside known to possess a long clinical duration of action.

Tissue studies with digitoxin $^{14}C^{4}$ showed what appeared to be a lack of selective distribution of the glycoside in human subjects and revealed significant concentrations in liver, gall bladder, kidney, and small and large bowel as well as the heart.

These studies demonstrated the feasibility of radioactive tracer techniques to study digitalis metabolism and greatly enhanced our knowledge in clinical utilization of digitoxin. Recommended dosage for digitoxin based upon these studies is outlined in Table I.

II. Digoxin

Digoxin has been much more extensively studied than any other glycoside by tracer techniques, and these studies will be examined in detail.

Doherty and Perkins[10] first labeled digoxin with tritium in 1959 and proceeded to study the serum levels, serum turnover time, and excretion of the drug and its metabolites by the oral,[11] intramuscular,[12] and intravenous[13] routes of administration.

* Professor of Medicine and Director, Division of Cardiology, UAMC-VAH Complex, Little Rock, Arkansas.

With the technical assistance of Jacquelyn Gammill, B.S., M.T. (ASCP), and Joyce Sherwood, B.S., M.T. (ASCP).

Dedicated to and in honor of James Sherwood Taylor, B.S., M.D., Emeritus Professor of Medicine (Cardiology), and Director, Division of Cardiology, University of Arkansas Medical Center.

From the Department of Medicine, University of Arkansas Medical Center and Medical Service, Little Rock Veterans Administration Hospital, Little Rock, Arkansas. This work was performed during the tenure of Dr. James S. Taylor as Director of the Division of Cardiology and with his encouragement and advice.

Supported in part by U. S. Public Health Service Grant No. HE06642-07, Division of Research Facilities, Grant FR49, the Arkansas Heart Association, and the Burroughs-Wellcome and Co., Inc. (USA), Tuckahoe, New York.

Presented in part as a special lecture at the University of Minnesota School of Medicine, March 12, 1969.

*The favorite glycoside of Dr. James Taylor, who was a moving force in development of these studies.

TABLE I
RECOMMENDED DOSES OF DIGITALIS

	Oral	IV	IM	Maintenance	No Loading Dose
Digitoxin	1.0-1.5 mg	1.0-1.5 mg	1.0-1.5 mg	0.1-0.15 mg	0.1-0.15 mg
	given during a single 24-hour period				for 25-30 days
Digoxin	1.0-2.5	1.0-2.0	1.0-2.0	0.125-0.75 mg	0.125-0.75 mg*
	given during a single 24-hour period				daily for 5-7 days

*Dosage depends on renal function, end organ response, absorption and excretion (see text).

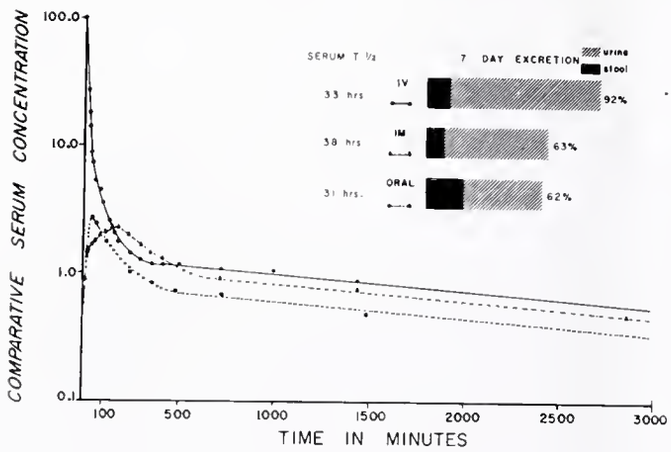


Figure 1.

Tritiated digoxin turnover and excretion after oral, intramuscular, and intravenous administration. Comparative serum concentration is plotted on the vertical axis on a semilogarithmic scale, time on the horizontal axis in minutes. Only the first 3,000 minutes of an 8,400 minute study is shown to better demonstrate the early portion of the serum turnover curves. Note the high initial level of digoxin after intravenous administration with a rapid fall to a serum plateau, indicating rapid tissue binding and distribution; the early peak level after oral administration with a later and longer tissue distribution and binding component; and finally the later peak and even later achievement of the serum plateau after intramuscular dosage. Excretion rates for a 7-day study are shown at the upper right and indicate larger quantities of excretion after intravenous administration, indicative of higher serum concentration and increased excretion in the first day of the study. Note similarity of the dominant serum half-time by any route of administration, showing that for maintenance of digitalization with digoxin approximately ⅓ of the "loading dose" should be replaced each day.

These studies are summarized in Figure 1. This is a composite graph of 12 patients with congestive heart failure who received a single dose of tritiated digoxin orally, 13 patients who received the drug intravenously, and 10 patients, by the intramuscular route. The total 7-day excretion, expressed in percent of the total dose administered, is also shown. It should be appreciated that this is a composite figure and there are individual differences that may be encountered in turnover rates and excretion. These are, however, useful guidelines and serve very well as a model for the clinical determination of digoxin dosage.

Digoxin is excreted primarily by the kidney as the unchanged glycoside, only a small portion of the drug being metabolized.

These basic studies reveal digoxin to be almost completely absorbed (80-85%), and dispel the belief that digoxin was only 60% absorbed[14] indicating much larger oral doses were necessary for clinical effect. The knowledge that inotropic properties of digitalis are present in proportion to dose administered with small doses of digitalis as well as with large "fully digitalizing" doses (maximum, without toxicity) also tend to favor the use of smaller doses for best effect without toxicity. The impression that toxic effects be induced to assess full clinical effect is, therefore, erroneous and should be avoided. The dose of digoxin required for negative chronotropic effect (A-V nodal block; rate effect in arrhythmias, particularly atrial fibrillation and flutter), is not the same as that required for best improvement in contractile properties (inotropic effect) of heart muscle. Much of the controversy regarding dosage of digoxin is based on the lack of knowledge or failure to appreciate that frequently much larger doses of digitalis are required to slow the ventricular rate in atrial fibrillation than are required to treat congestive failure with a normal sinus mechanism.

The usual dosage recommendations for digoxin are outlined in Table I and are, indeed, smaller than those in general clinical use. Friedberg[14] comments on this in the recent edition of his classic textbook of cardiology.

As digoxin is excreted primarily by the kidney, it is of importance to recognize differences in serum levels, turnover rates, and excretion in renal failure. This has been accomplished,[15-18] and a comparison of digoxin serum levels, turnover, and excretion is shown in Figure 2. Note that the excretion rate of digoxin is markedly reduced when the blood urea nitrogen (BUN) reaches levels of 80 mg %, the serum digoxin levels are higher, and the serum half-time is much longer. These findings dictate the use of smaller doses of digoxin when renal failure is accompanied by congestive failure and digoxin is required; usually ½ to ⅓ of the usual dose of digoxin will be adequate. Figure 3a graphically illustrates the relationship of the BUN to digoxin excretion.

Related to these studies with renal failure are studies performed with peritoneal and hemodialysis,[19] which demonstrate the ineffectiveness of dialytic procedures for digitalis poisoning or digitalis intoxication.

Similarly, studies before[20] and after renal transplant[21] demonstrate that renal digoxin clearance is reduced in these patients. Digoxin dosage can be related mathematically to the creatinine clearance[22] as it has been shown that the relationship of digoxin clearance to creatinine clearance is near unity.[23] Figure 3b is a graph showing that if the creatinine clearance and digoxin clearance are performed simultaneously, the clearances are nearly identical. Digoxin dosage should be reduced when creatinine clearance approaches 50 ml minute, as digoxin clearance will approach this figure which is usually about 50% of normal for most laboratories. There is a slight increase in stool excretion in renal failure (see Figure 2), and any adjustments in dosage before this clearance level is reached probably will not be necessary unless other factors influencing dosage requirements are present.

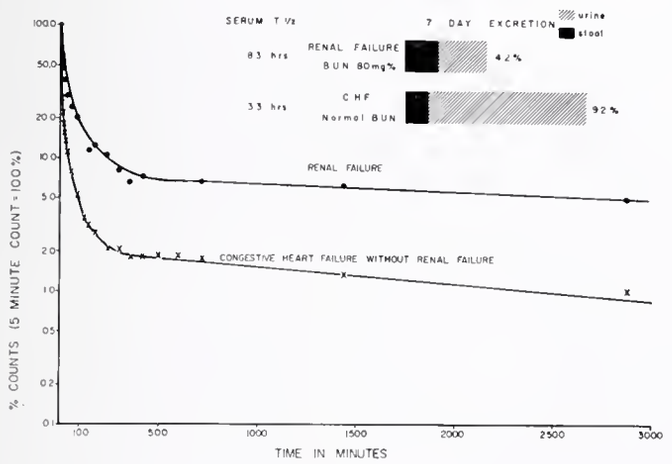


Figure 2.

The effect of renal failure on the serum level, turnover and excretion of tritiated digoxin. Intravenous doses of tritiated digoxin were given to 13 patients with congestive heart failure and "normal" renal function and to 12 patients with renal insufficiency. Composite serum levels are shown plotted on the vertical axis on a semilogarithmic scale against time in minutes. Note the longer serum half-time and higher serum levels of digoxin in renal failure. Seven-day excretion is shown at the upper right and reveals prolongation of renal excretion of digoxin in renal failure.

Studies on normal volunteer donors for renal transplant also demonstrate that dosage of digoxin should be based on the functional status of the single remaining kidney in these patients.[23] The remaining normal kidney function is usually quite good and no adjustment in digitalis dosage is necessary following nephrectomy. The function of the remaining kidney should determine digoxin dose.

The patient with thyroid disease who requires digitalis has always been a clinical problem. The patient with hyperthyroidism and atrial fibrillation with a rapid ventricular response is typical of the group of patients who require large doses of digitalis to control the ventricular rate. Patients with myxedema, on the other hand, often develop signs of digitalis toxicity with less than usual doses. It is appreciated that this latter group may respond to thyroid hormone alone; however, digitalis is often a useful addition, if properly used in selected patients.

A group of 23 patients with thyroid disease were given tritiated digoxin[24] to study serum levels, turnover and excretion and to determine if increased metabolism of the drug was responsible for the observed clinical differences in digitalis tolerance.

The results obtained in this study can be summarized best by inspection of Figure 4. This figure demonstrates lower serum levels of digoxin for comparable doses of digoxin with hyperthyroid patients, intermediate with euthyroid patients, and highest with patients having myxedema. These differences were observed whether the drug was given by the oral or intravenous route, and excretion levels were not significantly altered. Lower digoxin dosage may now be prescribed with hypothyroidism and higher doses with hyperthyrodism on an objective basis.

Marcus[25] has shown that liver disease (cirrhosis) and hepatic failure does not compromise digoxin metabolism, and the usual doses of digoxin are recommended when this disease state is associated with indications for digitalization.

Patients with pulmonary heart disease (corpulmonale) are extremely sensitive to digitalis, and should digoxin be required, small doses are recommended.

Post mortem examinations were performed on patients receiving tritiated digoxin (who succumbed to their disease) and tissues were analyzed for digoxin content.[26] These studies revealed the greatest concentration of digoxin in kidney, heart, and liver per gram of tissue. Smaller amounts were present in skeletal muscle, but as this constitutes 40% of body weight, it remains a significant depot of digoxin. A blood-brain barrier was also demonstrated, little di-

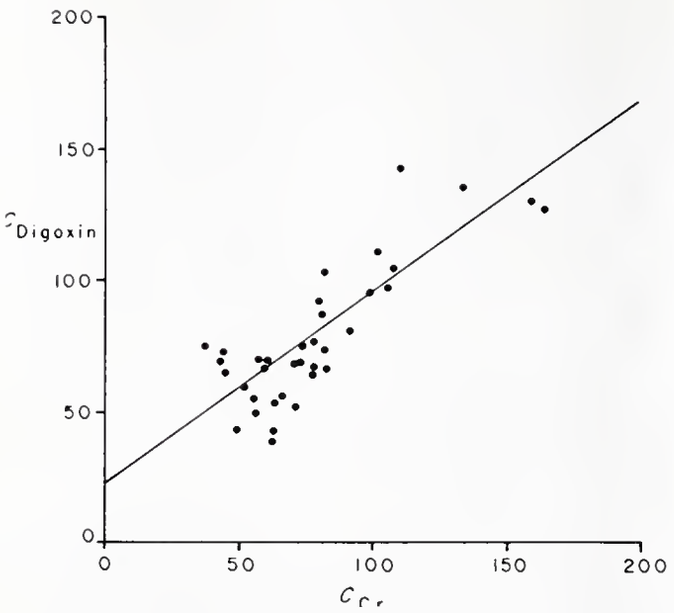


Figure 3a.

The relationship of the blood urea nitrogen (BUN) to digoxin excretion. The percent of the total dose of digoxin excreted in the first 24 hours is shown on the vertical axis on a semilogarithmic scale and the BUN in mg % on the horizontal. Note that the higher the BUN, the less digoxin is excreted. The regression line shown has a correlation coefficient of −.816 and is highly significant. Digoxin excretion is significantly prolonged in renal failure, and, when the BUN approaches 60-70 mg %, this indicates that only about 10% of the total dose is excreted in the urine during the first 24 hours after the dose. A high BUN thus dictates a smaller dose of digoxin.

goxin being present in brain substance following a single dose of the glycoside.

Elderly patients' sensitivity to digitalis has been noted and recently studied by Marcus.[27] This study demonstrated a modest reduction in excretion of digoxin in the elderly, proportionate to the reduction in creatinine clearance often seen in elderly patients. A reduction in the dose of digoxin in the elderly is recommended, based on reduced creatinine clearance.

Infants and children have been studied by Dungan, Doherty, and Harvey[28] who find serum levels, turnover times and excretion unaltered and no change in digoxin dosage necessary for children compared to adults provided the dose is based upon the body surface area and not on actual body weight.

"Normal" individuals have been studied by Marcus, et al.[29] and Doherty and Flanigan[23] and reveal no significant alteration in digoxin metabolism compared to patients with congestive heart failure. The presence or absence of heart failure does not change the digoxin requirement, its metabolism, excretion, or turnover time.

Excessive requirements for digitalis may be summarized as a product of one or a combination of the following factors:

1) inadequate absorption
2) altered metabolism
3) lack of end-organ response

Type one was demonstrated in one patient in the original series of oral patients[11] who excreted 40% of the administered dose of tritiated digoxin in the stool. Type two has been described by Luchi and Gruber[30] in a patient with increased requirements of digoxin who metabolized the drug to dihydrodigoxigenin, a compound with very little cardiotonic properties. Type three is best shown by the hyperthyroid patient whose tissue levels of digoxin appear normal (although serum levels are lower), yet require larger quantities of digoxin for control.[24]

A decreased requirement for digoxin is sometimes seen, and the factors responsible for this alteration in dosage requirement may be summarized as follows:

1) reduced (prolonged) excretion
2) electrolyte disturbance
3) increased end-organ sensitivity

The first factor is obviously related to the patient with renal failure, a high BUN, and reduced creatinine clearance. The second type is rather commonly observed in patients on digitalis and diuretic therapy in combination who develop hypokalemia and resultant digitalis toxicity. Calcium may also sensitize the myocardium to digitalis. Increased end-organ response (type 3) is seen in the hypothyroid patient whose excretion and turnover times are normal, yet who is exquisitely sensitive to digitalis. A combination of these factors may also be operative in some patients.

Digitalis Toxicity

Table II lists the usual symptoms and findings in digitalis intoxication; a very common and important complication of digitalis administration.

TABLE II

Appearance of any of these signs or symptoms in a patient receiving digitalis should lead one to suspect toxicity and discontinue the drug.

TABLE II

1. visual disturbance (any type)
2. headache
3. psychotic or neurologic symptoms
4. arrhythmia (any type)
5. nausea
6. vomiting
7. diarrhea
8. dizziness
9. somnolence
10. fatigue

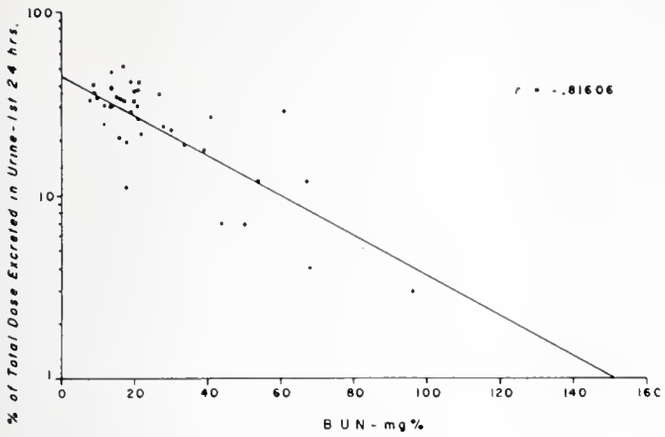


Figure 3b.

The relationship of the digoxin clearance to creatinine clearance. The clearance of digoxin is plotted on the vertical axis in milliliters of serum cleared of digoxin per minute with creatinine clearance as milliliters of serum cleared of creatinine per minute on the horizontal axis. The regression line has a correlation coefficient of 0.83, which is highly significant, and one can observe that the clearance of digoxin is only slightly more than that of creatinine. A low creatinine clearance means a low digoxin clearance, and thus dictates a smaller than usual dose of digoxin.

Digitalis is a commonly used drug, and up to 20% of hospitalized patients receiving digitalis have been noted to be toxic. This is an important and dangerous complication. The effectiveness of presently used diuretics, together with good clinical judgment make this serious complication unwise, unnecessary, and inexcusable.

Summary

Digitalis metabolism (digoxin and digitoxin) has been reviewed. The relationship of digoxin excretion to renal function has been stressed: Patients with poor renal function require smaller doses of digoxin for adequate maintenance of optimum digitalization.

Myxedema patients require smaller doses of digoxin for adequate therapy; patients with hyperthyroidism often required more.

Elderly patients often have prolonged digoxin excretion and require less digoxin as a result.

Digitalis intoxication is a serious complication encountered in as many as 20% of patients receiving digitalis during the course of therapy. A plea is made for the smallest dose of digitalis to accomplish the desired effect, as even suboptimal doses of digitalis have a useful inotropic effect.

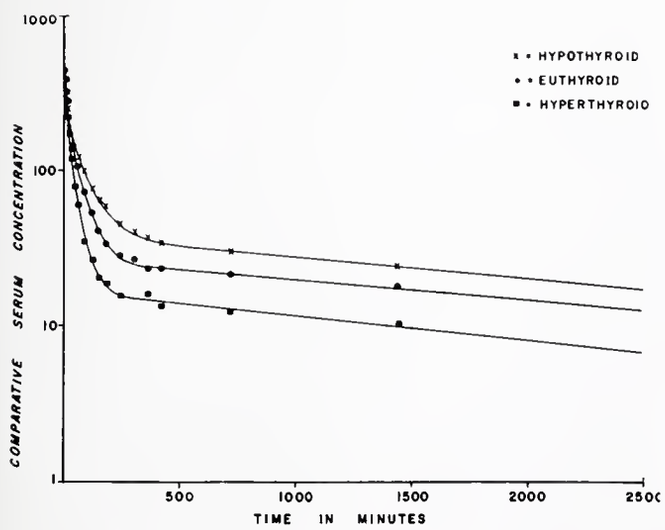


Figure 4.

Serum levels of digoxin in thyroid disease. The comparative serum tritiated digoxin level is plotted on a semilogarithmic scale on the vertical axis, time in minutes on the horizontal. Hypothyroid patients are indicated by (x), euthyroid by (●), and hyperthyroid patients by (■). Note that serum digoxin levels are highest in myxedema, intermediate in the euthyroid state and lowest in the hyperthyroid state. These findings confirm the impression that larger doses of digoxin are necessary in hyperthyroidism and smaller doses should be effective in myxedema to achieve the desired result.

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DNA Synthesis by Erythroblasts in Normal Man in Some Disorders of Erythropoiesis

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The DNA synthesis of the erythroid cells was investigated in bone marrow cultures by an autoradiographic method using ^{3}H-thymidine. A decrease of the label was found in hypoplastic anemia, indicating a considerable diminution of the proliferative pool of erythroid cells. There was a slight decrease of labeled cells in polycythemia vera at the beginning of incubation, indicating some diminution of proliferation. By the end of the incubation period the percentage of the labeled cells was normalized. In iron deficiency anemias the ^{3}H-thymidine incorporation did not differ from that in normal subjects.

Surgical Considerations in Esophageal Hiatus Hernia

James T. Parsons, M.D.*

Esophageal hiatus hernia is one of the most common causes of symptoms related to the gastrointestinal tract. It occurs in all age groups, being especially prone to occur in females who are 50 years of age or older. The clinical spectrum of esophageal hiatal hernia is very broad and symptoms when present are often nonspecific but may mimic those symptoms arising from disease of the cardio-respiratory system, the gastrointestinal system, the biliary system, from pancreatic disease or other intrinsic disease of the esophagus and diaphragm. A few of the patients reported in this series have been treated for years for other associated conditions such as angina pectoris, gallbladder disease and pancreatic disease before it was realized that a hiatal hernia was at fault. This author has several patients who were labeled as psychoneurotic and others who were diagnosed as suffering from functional dyspepsia before being permanently cured of all symptoms by a simple hiatus hernia repair. Disease of other organ systems is commonly observed with hiatal hernia. It is imperative in the medical examination that a thorough history of the patient's present illness and past medical history be obtained and proper laboratory tests be made to rule out associated disease. In routine roentographic examination of the gastrointestinal tract in patients who have gastrointestinal symptomatology, from ten to twenty-five percent of the patients will have a demonstrable hiatal hernia.

Some of these hiatal hernias are asymptomatic relative benign in their course and not related to the primary complaints. Some are often temporary as seen during pregnancy, in obesity or in infancy when they may be associated with esophageal disease. The association of carcinoma of the lower esophagus and cardia appears to be more than just a casual relationship. Schatzki reports that with careful fluoroscopic examination while applying pressure on the abdomen, he can detect a hiatal hernia in 70 percent of the patients over the age of 60. Certainly most of these patients are asymptomatic. Certain ethnic groups may be more prone to develop hiatal hernias than our general population. A reported instance of hiatal hernias in Japan and Korea is lowest as compared to the United States.

* Houston, Texas.

Pathogenesis

Esophageal hiatal hernia often occurs in obese individuals and the most recent work of Belsey regards weakness at the diaphragmatic hiatus as one of the principle factors in the pathogenesis of this disease. Congenital weakness of the fascia structures namely the phrenoesophageal ligament and posterior fascia that serves as an anchor to the lower esophagus to the diaphragm have been implicated as a major factor in the genesis of this disease. It appears that it is the relaxation of the phrenoesophageal ligament that permits elastic recoil of the stomach and esophagus along with positive pressure in the abdomen acting in unison with the negative pressure in the thorax that encourages the sliding of the stomach through the esophageal hiatus.

Natural History

Once developed the natural history of esophageal hiatus hernia is one of progressive disability. A careful follow up of symptomatic hiatal hernias revealed that 90 percent are often progressive and the majority of these will develop one or more complications despite symptomatic treatment the failure of medical therapy is the rule. The large esophageal hiatal hernias may be relative asymptomatic but in following these patients there is a 10 percent incidence of massive hemorrhage, a 50 percent incident of peptic esophagitis and a 35 percent incidence of respiratory complications. Complications can be fatal due to regurgitation and aspiration of egested food particles. Not infrequently a patient with pulmonary fibrosis, lung abscess and recurrent penumonia is seen who, after thorough work-up, is found to have a hiatal hernia. The lower esophagus may be severely damaged from progressive esophagitis, ulceration with stricture formation that simple hiatal hernia will no longer be feasible. A more formidable operative procedure will be required to eliminate this stricture and restore its esophagogastric continuity. The success of such a later procedure is less certain and the mortality and morbidity

much greater. Gastrointestinal bleeding secondary to an ulceration in the esophagus, stomach or duodenum is a frequent complication. It was significant in 24 percent of Brintnall and associates' and 17.5 percent of Groves and associates' patients. Paulson and associates observed severe bleeding in 7 percent of their patients. The pathogenesis of the bleeding may be from the esophagitis, gastritis or a gastric esophageal ulcer in the herniated viscera. The esophageal hiatal hernia in children is much less common than in adults, but it does exist even in children during their first two or three weeks of life. It is clinically manifest by intermittent bouts of regurgitation. Curiously enough, respiratory complications have not been reported and are certainly not a very large problem. The diagnosis is made entirely radiographically and frequently requires a cine technique because of the evanescence of the evidence. To complicate the matter in a very substantial series of children with hiatal hernia there is a disproportion who actually have pyloric stenosis. Children may also have a paraesophageal hiatal hernia and curiously enough it is almost asymptomatic except for progressive anemia.

Doctor Roviralta of Buenos Aires followed a small number of children in whom he had demonstrated a sliding hiatal hernia. Some of these hernias seem to disappear radiographically and clinically in the course of weeks or months with treatment in the erect position, or perhaps with no treatment at all. He was able to follow up some of these children as long as twenty years afterwards, finding out that in that interval a hiatus hernia did not redevelop.

Children like adults may have a clear type of peptic ulceration with severe stenosis, such as a classic Barrett type of ulcer in a child who has a mucosa-lined gastric tube. This eventually requires resection and replacement by an interposition operation. The same is true when tubular strictures occur in children with sliding hiatal hernias. Once a tubular stricture develops, the likelihood is quite small that this child will permanently escape an operation for replacement.

The proper selection of adult patients for esophageal hiatal hernia repair depends upon correlating the symptoms present with the pathology at hand. It involves determining those patients who will be relieved of symptoms and potentially serious complications.

Complications resulting from esophagitis and stricture formation have been well defined in the literature and can be presented by surgical repair of the hiatal hernia. The presence of esophagitis with stenosis is an indication for surgery. Patients with moderate stenosis may be relieved of the dysphagia by repair of the hernia followed, if necessary by intermittent dilatations with the Hurst dilators. It is also equally important in cases of incarceration of portion of the stomach and the chest cavity and in which there is a persistent vomiting that cannot be controlled nasogastric suctioning and sedation then surgical intervention is necessary. Large hernias, though relatively asymptomatic cause trouble frequently enough to make their presence an indication for surgical repair. The timing of the operation is important in order to assure the success of a correct repair and to prevent the necessity of more formidable and less successful surgical procedure. All physicians in the practice of clinical medicine should be familiar enough with the problem to interpret whether or not a patient's symptoms may be due to his hiatal hernia and, if so, whether medical therapy should be used as a trial measure to control his symptomatology or operative intervention should be recommended. A careful analyses and follow-up on symptomatic patients with esophageal hiatal hernia, some 90 per cent will later come to operative correction. With the trend established toward surgical repair of this disorder, physicians can expect to be faced increasingly with the decision of recommending the desirability of surgical repair in a particular patient. This can often be a perplexing problem. An understanding of the anatomic and resulting physiologic derangements is essential to arrive at a correct conclusion.

Pathophysiology

Esophageal hiatal hernias are classified as sliding (short esophagus type), paraesophageal (parahiatal or rolling type), and mixed (composite type).

Sliding hiatal hernias comprise more than 90 percent of hernias in my experience. The abdominal esophagus and upper stomach slide as a unit superiorly through the hiatus into the mediastinum carrying the anterior lateral reflection of peritoneum which forms the wall of the sac (Figure 1). This dislocation may be permanent

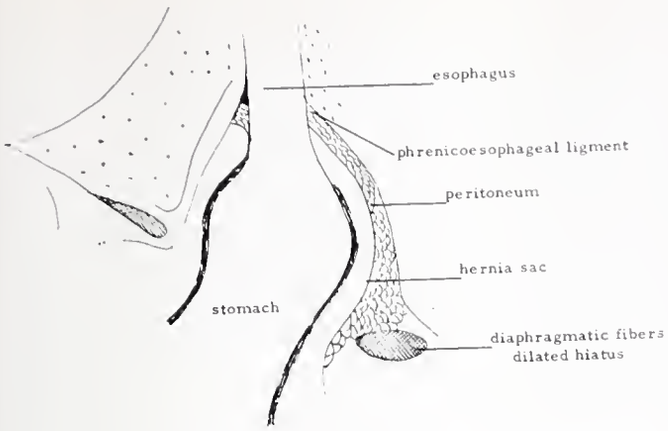


Figure 1.

Sliding hiatal hernia—cross section view. Peptic ulceration may occur either in the lower esophagus or herniated portion of the stomach.

or more frequently it is intermittent when abdominal pressure is temporarily increased or when a reclining or stooping position is assumed. This displacement of the esophagogastric segment above the diaphragm tends to produce incompetence of the cardiac sphincter mechanism resulting in regurgitation and the production of esophagitis and the various clinical symptoms.

Paraesophageal hernias comprise between 5 and 10 percent of hiatal hernias. In this type of hernia the esophagogastric junction remains below the diaphragm and usually the cardiac sphincter of the stomach is competent (Figure 2). Usually a portion of the stomach passes through an opening in the diaphragm, lateral to the left

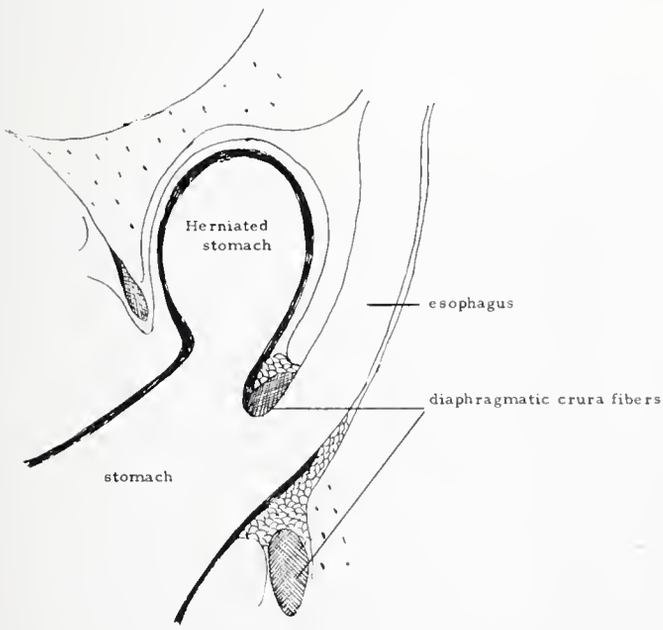


Figure 2.

Paraesophageal (parahiatal) hernia. The diaphragmatic muscle fibres between the herniated stomach and esophagus are exaggerated for demonstration. Often at operation they are quite thinned out and may not be apparent.

crura of the hiatus. Varying amounts of the fundus and greater curvature of the stomach will roll upward through the opening along side the esophagus for varying distances. Once the body enters into the thoracic cavity the stomach begins to roll to the right or to the left. This rotation is usually counter clockwise as seen from the front with fundus curving over to the right but sometimes it is counter clockwise with the fundus curving to the left. This tends to draw the body pylorus of the stomach to the left, ultimately the whole fundus and body will get into the sac leaving only the pylorus and part of the antrum. With rotation the body rises higher than the fundus and the greater curvature at the top. Because the stomach rolls into a paraesophageal hiatal hernia, Allison coined a very apt term when he called it a "rolling hernia."

The mixed or composite type of esophageal hiatal hernia comprises aspects of the sliding and paraesophageal varieties in varying proportions. The symptomatology in this type usually centers around incompetency of the cardiac sphincter with regurgitation, esophagitis, dyspepsia, and bloating.

The rare congenital true short esophagus which is seen in some classifications of hiatal hernia is not a true hernia in the usual sense. The stomach was never in its normal anatomic position as an abdominal organ. An esophagus whose lower segment is lined with gastric mucosa may be associated with a sliding hiatal hernia. These conditions may be differentiated from simple sliding hiatal hernia. Therapy is different and at times difficult. The ordinary Allison type of hiatal hernia repair will be impossible or will fail to relieve symptoms and may aggravate the situation in these cases.

Clinical Manifestations

Because of its potentials to produce varying degrees of symptomatology, esophageal hiatal hernia has frequently been referred to as "the great masquerader of the abdomen." The majority of symptoms associated with hiatal hernia are often the result of incompetence of the esophagogastric junction with reflux of gastric secretions into the lower esophagus, regurgitation of gastric contents, belching and irruptions. Intermittent symptoms induced or aggravated by postural portions which favor herniation of abdominal structure into the chest are highly suggestive of hiatal hernia. The symptoms pro-

duced are usually intermittent and progressive but may be acute or severe with little or no previous warning. Small hernias may be associated with severe symptoms. Large hernias are less likely to produce symptoms but more prone to develop serious complications. Occasionally abdominal organs other than the stomach also herniate through the hiatus to become obstructed, distended or strangulated.

The reflux of gastric secretions occurs because the mechanisms entering into the cardiac sphincter action become incompetent when the lower esophagus and adjacent stomach herniate into the chest above the diaphragm. The sphincter action depends upon the balance of a number of factors which include the intrinsic circular muscular fibers of the esophagus, the right crura of the diaphragm, the acute angle entrance of the esophagus into the stomach and the valvular action of the gastric mucosa adjacent to the esophagogastric junction (Figure 3). The mucous

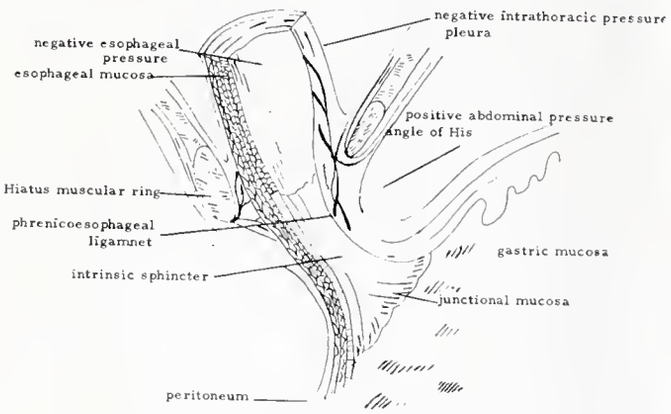


Figure 3.

Factors influencing sphincter action at the esophagogastric junction are many to maintain a balance, competency of sphincter action being a summation of these. Competence may or may not be lost with a change of one or several factors. This partially accounts for the variability of symptoms of reflux gastric juice in patients with hiatus hernia.

membranes of the esophagus or quiet susceptible to the irritative and digestive properties of acid peptic juice. Reflux esophagitis, peptic ulceration and eventually stricture formation of the esophagus can result. All the complications of peptic ulceration with bleeding, perforation, obstruction and possible malignant degeneration can develop. Subxyphoid epigastric pain, heart burn, regurgitation, difficulty in swallowing with vomiting are more common complaints. Hematemesis may be acute and severe with associated melena. More commonly, bleeding is less severe and chronic in nature and is manifest as an unexplained secondary anemia.

Complicating Factors in 85 Cases Adult Hiatal Hernias		
Cholelithiasis, Cholecystitis	16 or	18.8%
Diverticulosis	15	18.8%
Diverticulitis	5	6.2%
Peptic Ulcer Disease	11	12.9%
Gastric Ulcer	5	6.2%
Esophagitis	18	21.2%
Esophageal Ulcer	3	3.4%
Ventral Hernia	4	4.7%
Pancreatitis	3	3.4%
Heart Disease	6	7.0%
Stokes Adams	1	
HCVD Inf.	5	6.2%
Chronic Anemia	14	16.5%
Gastritis Iso.	6	7.0%

Types of Surgical Repair in 93 Cases Hiatal Hernia	
Transthoracic	24
Adults	19
Child	5
Transabdominal	67
Adults	65
Child	2
Allison Repair	73
Modified Allison	15
Harrington Repair	2

Types of Diaphragmatic Hernias in Series	
Esophageal Hiatal Hernias	93
Sliding	86
Adult	81
Child	5
Paraesophageal	4
Congenital Short Esophagus	3
Traumatic	16
Bochdalek	9
Morgagni	5
Eventration	11

Displacement of the stomach through the hiatus into the chest may result in its distention or partial obstruction. Emptying is oftentimes incomplete with irruptions and halitosis being one of the main complaints. Secretions of ingested food may puddle above the diaphragm in the hernia sac. This favors regurgitation into the esophagus and aspiration. If the patient is in the reclining position and asleep then there is a possibility of regurgitation, pneumonitis, and lung abscess formation. The heart or lungs may be compressed by herniated viscera resulting in symptoms related to the respiratory tract, namely dyspnea, shortness of breath and exercise intolerance. Postprandial epigastric fullness, substernal discomfort, nausea and vomiting are common symptoms. Precardial pain and shortness of breath may occur. Occasionally pain may radiate into the back or neck and down the left arm simulating angina pectoris. It may be re-

ferred to the left subscapular region and into the neck and even the external ear. It varies from a dull ache to excruciating pain. The pain is usually accentuated by stooping, lifting or assuming a recumbent position and is relieved by an upright position and deep breathing. Drinking milk and alkaline medications may give temporary relief when heart burn is predominate symptom. A gastric ulcer may develop in the patch of the herniated stomach, its development enhanced by retaining gastric secretions and mechanical factors. The symptoms and complications of gastric ulcer may become manifest with weight loss, bleeding and upper abdominal pains. The severe exsanguinating hemorrhages associated with hiatal hernia usually arises from ulceration of the stomach rather than the esophagus or duodenum.

The symptoms of gastric reflux and esophagitis are prone to occur into the sliding and mixed type of hiatal hernia. Those arising from hernias of the stomach and to the chest are present in all three types. Table I summarizes the symptoms present in 93 patients operated for hiatal hernia.

The Selection of Patients for Operative Correction

It is usually the history that the clinician to suspect the presence of an esophageal hiatal hernia, roentographic studies with fluoroscopy are necessary to confirm the diagnosis. Occasionally a PA chest film will disclose the gastro-organ with or without a fluid level just above the diaphragm contrasted against the cardiac silhoutte. In most cases, however, roentographic study after ingesting of a barium meal is necessary. The radiologist must be forewarned of the possible diagnosis. Specially positioning in the prone, supine and oblique, Trendelenburg positions are special measures to increase intra-abdominal pressure such as employing the Valsalva maneuver may be required in order to demonstrate the hiatal hernia. Irregularities of the esophageal mucosa indicating esophagitis or a stricture may be recorded. An ulcer niche may be present in the lower esophagus or proximal stomach. Usually ulceration in esophagitis is superficial and is not well visualized. Differentiation of sliding and paraesophageal types of hernia is oftentimes possible radiographically but this is not an accurate index in many instances.

After confirmation of the diagnosis of hiatal hernia by roentographic examination it may be necessary to do esophagostic studies to determine the presence or absence of esophagitis or stricture formation and to rule out other intrinsic disease of the esophagus. Esophagoscopy is also important to determine the level of junction of esophageal and gastric mucosa in children with this condition. This factor will influence the operative procedure if it is suspected that a true acquired or congenital short esophagus is present. Ordinary operations should not be delayed if esophagitis or any degree is present or peptic ulceration of the lower esophagus or herniated stomach patch is demonstrated.

A large group of these patients who have roentographic confirmed hiatal hernias in

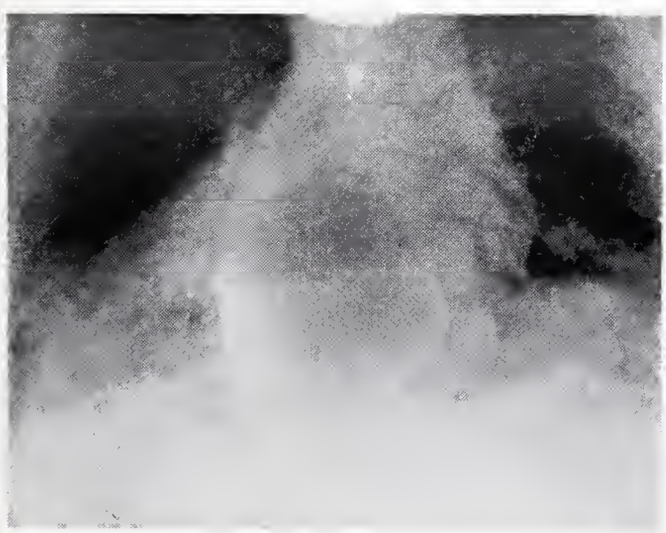


Figure 4.

A large sliding hiatus hernia with esophagogastric incompetence and regurgitation in a 64-year-old woman. Aspiration pneumonitis and fibrosis are present.

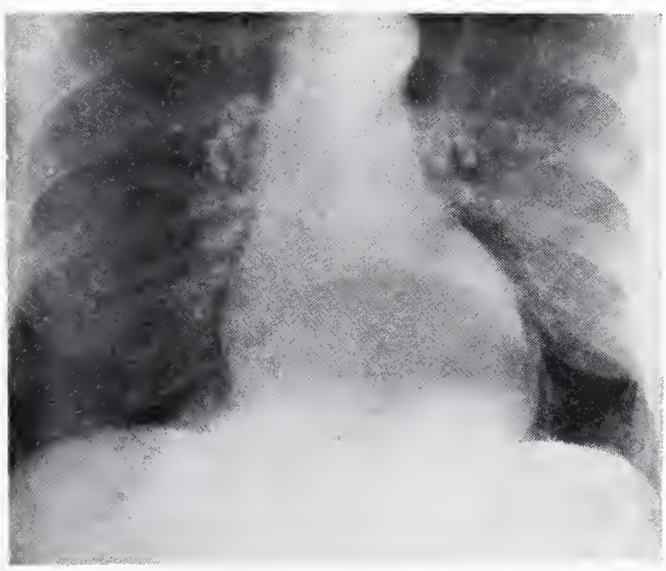


Figure 5.

Large sliding hiatus hernia in a 60-year-old woman who complained of "wind around my heart."

symptoms highly suggestive of esophagitis but objective evidence of the latter is lacking on esophagoscopy. This condition has been termed "pseudoesophagitis." Similarly patients may have symptoms associated with gastric herniation with or without pseudoesophagitis. Valuation of these groups of patients for repair of symptoms from operative hernia repair is marked most diffcult. On the other hand the decision may be just as urgent. Symptoms may be making the patient's life miserable or actually be incapacitating him. One of the most valuable aids in arriving at a decision with these groups of patients is the period of hospitalization for close controlled observation. It is during this period of time that a clinical assessment of the patient's personality and factors that influence his hiatal hernia are ascertained. Most important is the fact that symptoms resulting from a hiatal hernia are insighted or aggravated by postural positions which tend to cause or increase herniation of the abdominal contents into the chest.

Reclining, stooping or straining particularly after a heavy meal may precipitate or increase the symptoms. At retirement at night patients not infrequently will arise from bed and walk about the room to secure relief. Belching, regurgitation of food or elevating the head of the bed may temporarily eliminate symptoms. Posture relationship of this sort which were not listed during initial questioning and examination of the patient has been repeatedly verified during this period of hospitalization. One striking example was a patient whose chief complaint was intermittent excruciating pain inferior to the left scapula and who demonstrated a hiatal hernia roentographically. Posture relationship to his episodes of pain were confirmed on several occasions during the hospital observation period. At laparotomy no other organ disease was noted and repair of his hiatal hernia would give prompt or permanent relief of his manifestations. In nearly 60% of the patients subjected to operative repair of hiatal hernia I have confirmed posture relationship to symptom complexes. Approximately one-third of the patients with hiatal hernia and symptoms compatible with this disorder had coexisting disease of other organs capable of producing similar symptoms. For this reason alone it is essential that all patients with suspected hiatal hernia be carefully studied to verify or exclude this possibility. Cardiac or pulmonary disease, gastric or duodenal ulcer, colicystitis and pancreatic disease are the most commonly associated conditions.

Techniques of Surgical Repair

A wide variety of operative procedures are currently used for repair of esophageal hiatal hernia and represents a course of confusion both to the patient and to his private physician. Most techniques have been described during the past sixteen years, and a very large number reflexes dissatisfaction with surgical results.

The three fundamental concepts in the surgical management of esophageal hiatal hernia is (1) to restore the stomach and esophagogastric junction to its normal anatomic position, (2) reduce the size of the esophageal hiatus and, (3) secure the phrenicoesophageal ligament. This simple operative concept was initially described by Allison[1] in 1951, and has been used by most surgeons in this country with or without minor modifications. Variations in the technique as described by Allison have been a natural sequence as described by Humphrey, Groves, Husfelt and others. Hayward has emphasized the importance of utilizing the insertion of phrenicoesophageal ligament into the adventitious of the esophagus as a fixed point that holds sutures well in securing the esophagogastric junction within the hiatus. A wide variety of operative procedures have been devised by different surgeons depending upon their concept of what constitutes normal esophagogastric continuity. In some techniques the normal esophagogastric anatomy is reconstructed while in others the normal is disregarded but a procedure is devised that is considered to be important in preventing reflux of gastric contents into the esophagus. Hiebert and Belsy have devised operations which have now reached the mark four variety. Lind and associates have devised an operation based on one of Belsy's procedures which consist of partially wrapping the fundus of the stomach around the esophagus.

Surgical Exposure

The controversy of the thoracic versus the abdominal approach is essentially one of familiarity, but it cannot be emphasized too strongly that the bold general health and associated disorders of each patient should be assessed so that the best approach can be made. Adequate exposure can be obtained by either the transthoracic or transabdominal approach depending upon the experience of the surgeon. In both

types of operative approaches the esophagus is mobilized at the hiatus along with the hernia which is defined. The phrenoesophageal ligament is incised close to the esophagus and the hernia reduced. Following this the stomach and esophagogastric junction is placed in its normal anatomic position and the dilated fibers of the hiatus are approximated snugly around the esophagus posterior to reduce the hiatus to its normal size. The phrenoesophageal ligament is then secured to the subdiaphragmatic fascia adjacent to the circumference of the hiatus with interrupted silk suture. This prevents displacement of the stomach and cardia into the mediastinum through the hiatus. This simple hernia repair is all that is necessary in the majority of cases of symptomatic patients with hiatal hernia. In selected patients, particularly those with esophagitis and concomitant ulcer diathesis additional procedures to reduce gastric acid production, eliminate associate peptic ulcer disease, of the stomach or duodenum and insure prompt emptying of gastric contents may be advisable. The basic concept in the repair of the esophageal hiatal hernia as outlined by Allison, reducing the hernia, approximating the hiatus and securing the phrenoesophageal ligament to the diaphragm should not be neglected when these additional procedures are performed.

Clinical Summary

The clinical parameters associated with esophageal hiatal hernia and its anatomical derangements can be correlated surgically. A few hiatal hernias are asymptomatic and benign in their course. Others are more progressively disabling and threatening to life; to delay surgical management and repair of the hernia may prove disastrous. Prompt selection of patients for operative correction is difficult if symptoms are not specific for hiatal hernia as they may mimic disease arising from other organs. One of the most valuable aids in arriving at a decision in this group of patients is a period of hospitalization for close observation.

The physiological sphincter at the lower end of the esophagus is considered to be the most important mechanism in preventing the reflux of gastric content into the esophagus and symptoms related to esophageal hiatal hernia. The fundamental concept in the surgical management of esophageal hiatal hernia is based on the original procedure as described by Allison in 1951. In general, patients whose symptoms are disturbing to the living of a normal, comfortable life, deserve the benefit of surgical correction of their hiatal hernia and relief of their difficulties.

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Radioimmunoassay of Parathyroid Hormone in Primary Hyperparathyroidism

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Brit Med J 2:789-792 (June 28) 1969

Parathyroid hormone, measured by radioimmunoassay at operation in eight patients with primary hyperparathyroidism due to parathyroid adenomata, was demonstrable in the blood in each patient. There was close immunological similarity between hormone extracted from the adenomata and that circulating in the blood, suggesting a common identity. The initial peripheral venous concentration of parathyroid hormone (mean 2.01 mμg/ml) fell rapidly to normal or subnormal within one to two hours of removal of the adenomata. The secretion rate of hormone in these patients amounted to a mean daily total of 1.4 mg. The concentration of hormone in the adenomato was 43μg to 57μg/gm wet weight. This suggests a complete resynthesis of parathyroid hormone in the adenomata.

Practical and Theoretical Implications of Fetal/Maternal Lymphocyte Transfer

J. Walknowska, F. A. Conte, and M. M. Grumbach (Dept of Pediatrics, Univ of California, San Francisco)

Lancet 1:1119-1122 (June 7) 1969

In 21 lymphocyte cultures prepared from peripheral blood samples taken from 30 pregnant women, one or more euploid metaphase figures with five small acrocentric chromosomes interpreted as 46/"XY" were found. Nineteen of the 21 women gave birth to male infants, and two gave birth to females. The two false-positive results were in women in whom only one cell with five small acrocentric chromosomes had been found, whereas all ten patients in whom two or more cells were found gave birth to males. Cells with 46/XY karyotype in the maternal circulation were detected as early as the 14th week of gestation. The antenatal diagnosis of a male fetus can be made by karyotypic analysis of lymphocytes in maternal blood. Similarly, it should be possible to identify fetal chromosome abnormalities by this procedure. Transfer of fetal lymphocytes to the mother may play a part in the acceptance of the fetus as a homograft.

Major Problems in Public Health Planning*

Ben N. Saltzman, M.D.

I have served as a part time County Health Officer in Baxter County for more than twenty years. For more than twenty-two years, I have been engaged in the General Practice of Medicine and Surgery in Mountain Home. Throughout these many years, I have been impressed with the dedication and service of the Public Health Nurses in that area.

As I became better acquainted with the personnel of the State Health Department, I learned that this organization served the people of our state with the greatest sincerity and skill possible for any state agency. As I became interested in County and State Medical Society activities, I learned that my fellow physicians held our State Health Department in the same high esteem as my own. Practically all requests presented to the Council of the State Medical Society by the State Health Officer met with instant approval. This relationship between the private sector of medicine and the official agency is the finest in the country, and I am proud of it.

Recently, I was appointed to the Governor's Advisory Council on Comprehensive Health Planning. I was given the Chairmanship of a Task Force for an in-depth study of the State Health Department. Our committee has held two meetings with the heads and various personnel of the department and we have learned of some of the major problems. One of our committee members quickly came to the conclusion that three needs were identified at once; shortage of personnel, shortage of local funds, and shortage of state funds. I believe that this member came right to the heart of the matter. However, we must be more specific. We must take a closer look and then we must draw some conclusions and make some plans for action.

Now, in my new capacity as a health planner, I want to make a primary observation which has long been apparent to all of you. The State Health Department has planned for the health of the people of Arkansas long before health planning became a Federal concept. It will continue to plan in this manner because it is the agency most qualified to do so. Its officers and staff have long been oriented along this line and planning for the provision of services and budget is second nature to its existence. It has long operated on a system of shortages; shortages in funds and shortages in personnel, that is, trained personnel.

By its very nature, the Health Department requires a greater number of specialized workers than any other department in the state government. Health and its ramifications fall into many specialized categories. Modern concepts increase these categories. Today, more and more responsibilities fall to the lot of the health department. Yet, no funds are available for accomplishing the fulfillment of these responsibilities. Problems are being compounded, but solutions are few.

Perhaps it would be best if I specifically list some of these problems. It is true that the lack of money is at the root of most of the evil, but it is not the only factor.

1. Because of the structure of health services out in the counties, much confuction and irritation exists. County funds are low. Hence salaries to health workers are low. Hence, there are few health workers. Different salary scales in different counties exist. Hence there is more irritation and more dissatisfaction.

2. There appears to be a hopeless shortage of all health personnel in the state as compared to national averages. Once again the salary scale apparently plays a part.

3. There is an increasing demand for new services, but neither manpower nor funds are available to satisfy the demand.

4. The Medicare program and the soon-to-be Medicaid program are causing increasing demands for personnel that are not available. Public Health will play an ever increasing role.

5. Today, there is talk of using technicians and paramedical personnel to a greater extent in providing health care. This would not answer our problems. There is a lack of supervision at the County Health Officer level. There are only three full time County Health Officers in the state.

6. Our County Health nurses are overworked.

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* Presented to the Arkansas Public Health Association Annual Meeting, May 22, 1967, Hot Springs, Arkansas.

Mountain Home, Arkansas, Chairman, Committee on Public Health, Arkansas Medical Society.

There are a multitude of tasks to perform and not enough hours in the day to perform them. I thought I had some idea of the work accomplished by these wonderful people until I heard the District Supervisor from our area report to the Task Force Committee. These ladies accomplish the impossible.

7. I listened to the program of work outlined by one of our full-time County Health Officers. I heard the plans he had made for projects in the future. Wouldn't it be marvelous if we had forty men like this in the state. We should, you know. Our table of organization calls for that many.

8. There is a distressing need for Sanitarians in the state. As a half-baked County Health Officer, I realize this more than anyone. I am sick of inspecting septic tanks that run over, without being in a position to offer solutions and without the power to enforce any solutions I might chance to have.

9. We are not spending enough for health care. It is estimated that the cost per person in Arkansas is $2.50. For adequate care, the cost should be $6.50.

10. Leaving the financial realm, we find poor morbidity reporting in the state. The problem may be referred back to the practicing physician or to the clerical staffs serving the hospitals and clinics. No concerted effort is being made to improve this type of reporting.

Inadequate liaison exists between many health fields. Despite shortages, there is duplication of services and inadequate use of personnel available.

12. Despite the evolution of many new programs in the health field there is great reluctance on the part of public health staff and on the part of the community to give up old programs. This plays havoc with the use of available manpower. Inadequate study is being given to determine the need for either the new or the old programs.

13. Let's get back to money again. Low salaries do not provide proper incentive for young people to become health leaders or planners.

14. Present Comprehensive Health Planning is causing turmoil in the various health agencies. Guidelines are not available and a situation of uncertainty exists. It is difficult to view the future with equanimity when no one knows what the future might be and how far away it is.

15. An inevitable outcome of new programs, particularly those that are politically inspired, is the development of pressure groups in the local community and in the state. These groups can influence the delivery of health service in a manner not beneficial to all concerned.

16. Health problems are not always completely identified before aims and goals are set.

17. With so many agencies getting into the health act, there is a tendency for health dollars to be unwisely spent, usually through duplication of services. These dollars may simply be wasted.

I have presented a large number of problems. Actually, these are only a sample of those that beset our State Health Department today. What are the solutions?

It is hoped that through Comprehensive Health Planning, we can come up with some of the answers. That is supposed to be what planning is all about. Perhaps we can have a real partnership in health. With realistic funding, perhaps we in the private sector of medicine can work with you in the public health field to provide supervision and sharing of responsibility. Perhaps we can pass realistic state laws permitting the hiring of older nurses willing to go into the Public Health field with some retraining.

Perhaps by working together we can convince our legislators that good health is everybody's business and that it is good business. Decent salaries must be paid for good service. Perhaps our County Health Department earning equitable salaries and preserving some sense of security for the future.

The way things stand at present, the situation cannot get much worse, it can only improve. It is up to all of us to bring about that improvement. The Comprehensive Health Plan calls for recommendations from all. We need your suggestions. We must make this work or we all lose. It is my firm belief that the people of the state we serve are interested in helping themselves. We must show the way.

Years ago, as a high school student in a public speaking class, I asked the teacher what would most interest an audience. She said, "Talk about health. Everyone is interested in health." She was right. Everyone is interested in health. Our job is to interest everyone in doing something about it.



STUDIES FROM
THE UNIVERSITY OF ARKANSAS MEDICAL CENTER
THE DEPARTMENT OF
OBSTETRICS AND GYNECOLOGY
WILLIS E. BROWN, M.D., Professor and Chairman
JOHN B. NETTLES, M.D., EDITOR

Rehabilitation in Chronic Obstructive Lung Diseases

Charles Lee Smith, B.S.E., P.T.*

The incidence of lung disease has increased alarmingly during the past ten years. The Vital Statistics Division of the U. S. Public Health Service in 1965, indicated 110% increase in the number of cases of lung disease diagnosed in the three year period from 1961 to 1964.[1]

Emphysema is increasing at a much faster rate than other respiratory diseases. As a disabler, it now heads the list for respiratory diseases and is second only to atherosclerotic heart disease. The U. S. Security Administration[2] reported nearly 15,000 emphysemic persons under 65 years of age on disability compensation in 1963.

The terms used to describe all of the pulmonary obstructive diseases or chronic obstructive lung diseases vary considerably in the United States and abroad. The term "obstructive pulmonary emphysema" is generally used to describe a non-reversible, progressive condition in which there is inadequate air flow on expiration due to the destructive changes in the alveolar walls. This tissue destruction, leaving holes or windows in the lungs, results in shortness of breath, respiratory insufficiency, a loss of lung compliance, and chaotic oxygen-carbon dioxide exchanges. Emphysema can be considered the end result of obstructive disease when the tissue of the lungs begins to deteriorate.

The term "chronic bronchitis" is usually used to describe the presence of a chronic cough, a narrowing of the airways, some loss of ciliary action, and some mucous plugging of the alveoli. There is ventilatory insufficiency, but unless there is destruction of tissue, chronic bronchitis can be considered reversible.

The term "asthma" is generally used to describe a reversible condition of proximal obstruction of the smaller bronchi. The terms "bronchial asthma" and "chronic bronchitis" seem to remain interchangeable. There is very little differentiation in the literature and it becomes very difficult to make clear cut definitions.

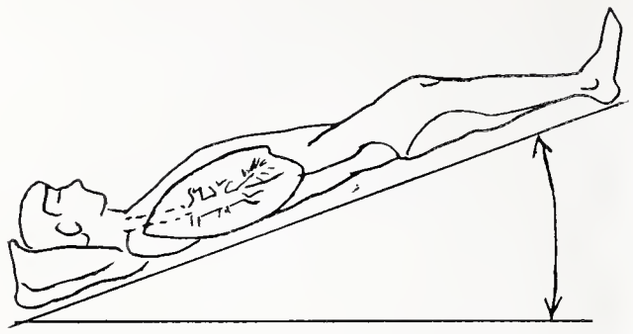
The term "wheeze" is used to describe a sound recognizable in airway obstruction. Although it is evidence of obstruction, it is not a diagnostic symptom by itself. Where a wheeze is heard, it is obvious that the obstruction is allowing the passage of some air. In the consolidated lung areas in emphysema, there is no wheeze, no sound at all, and no air flow.

Dyspnea, a symptom of respiratory insufficiency, is a sensation experienced by the patient, a subjective symptom described by the words of the patient "I cannot breathe," "I cannot catch my breath." Dyspnea is best understood by the physician, nurse and therapist by carefully watching the face, neck, and chest of the patient.

A fibrocystic lung is secondary to pancreatic disease. Alterations in tracheobronchial secretions bring cystic fibrosis into this family of obstructive lung diseases. A very viscid, tenacious secretion occurs. Recurrent pulmonary infection, mucosal and submucosal edema and bronchial spasm are the general symptoms. Fibrosis of the lungs produces a loss of alveolar tissue similar to emphysema.

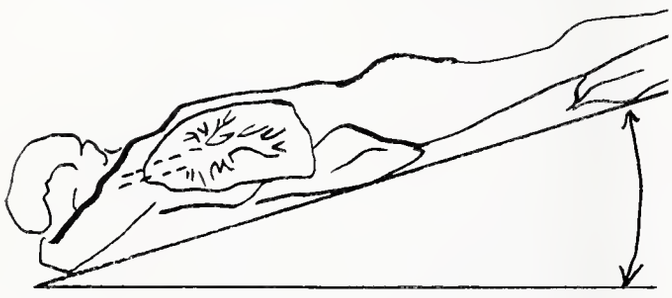
It is possible to relieve some of the patient's physical distress through retraining in breathing and muscular reconditioning. He can be taught

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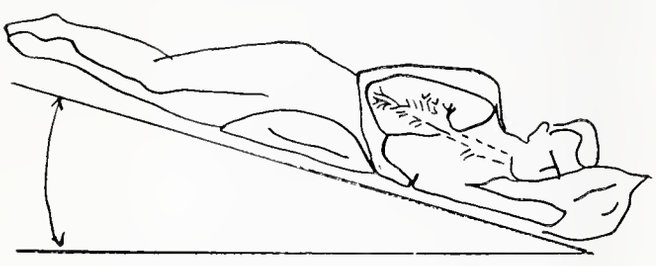
ON BACK—HEAD DOWN

Foot of bed raised 12 to 18 inches; pillow under knees to assist relaxation of abdominal muscles. Clap and vibrate over lower ribs on front of chest. Both sides can be vibrated at the same time.



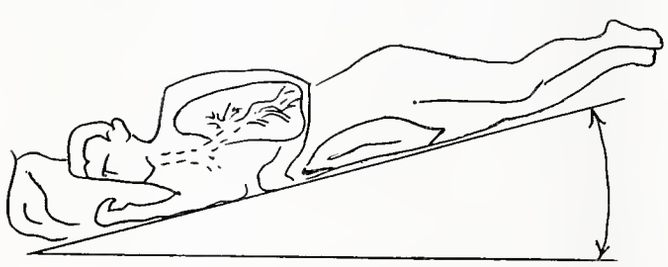
ON FRONT—HEAD DOWN

Foot of bed elevated 12 to 18 inches. Head down lying on abdomen with 1 or 2 pillows under hips. Arms folded under head. Clap and vibrate over lower ribs on back of chest. Both sides can be vibrated at the same time. Head should be turned to right half of the time and to left the remainder.



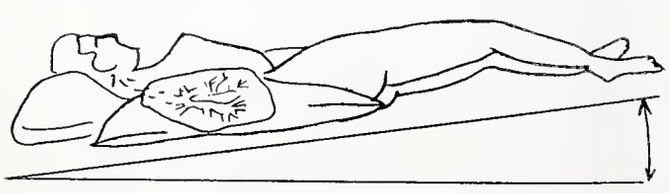
RIGHT SIDE—HEAD DOWN

Foot of bed elevated 12-18 inches—head down—patient lying on left side with small pillows under waist and head if necessary to keep spine straight. Knees bent. Clap and vibrate over lower ribs on right side.



LEFT SIDE—HEAD DOWN

Foot of bed elevated 12-18 inches—head down—patient lying on right side with small pillows under waist and head if necessary to keep spine straight. Knees bent. Clap and vibrate over lower ribs on left side.



RIGHT MIDDLE LOBE

Foot of bed elevated 12 inches—head down—patient lying on left side—place pillow behind patient from shoulders to hips and roll patient back on it 45 degrees (1/4 turn). Keep knees flexed slightly. Clap and vibrate over right nipple.



UPPER LOBES—APICAL SEGMENTS

Bed flat—pillow against therapist—patient lies back against pillow and therapist at a 30 degree angle. Clap and vibrate over clavicles.



UPPER LOBES—POSTERIOR SEGMENTS

Bed flat—pillow folded on lap—patient leans forward over pillow at approximately 30 degree angle from the verticle. Clap and vibrate at shoulder line over the back on both sides. Fingers extend over shoulders.

to protect himself from environmental conditions and to exercise regularly. He must learn to follow a daily procedure to slow up the physical changes that are taking place and will eventually incapacitate him. By encouraging the patient to increase his muscular abilities and to retrain his breathing pattern, not only can his physical distress be relieved, but also the apathy and hopelessness frequently seen in patients with chronic airway obstruction will be reduced. Increased bronchial secretions in patients with pulmonary problems must be controlled. Intake of

fluids is very important and the patient should be told to drink sufficient amounts of liquids other than coffee and tea, which are undesirable because of their diuretic effect. Because of indoor heating in winter months, humidifiers should be used to prevent the drying out of tissues during sleep. Secretions tend to accumulate during the night and there will be a period of coughing and dyspnea on awakening.

Respiratory insufficiency can result also in a narrowing of the bronchioles due to structural changes. Damage to the alveolar wall will result in retained or trapped air because of the loss of recoil of the tiny air sacs.

Mucosal edema, or obstruction of the airways due to tenacious secretions, also may interfere with alveolar ventilation. When the air flow is definitely obstructed, it leaves the lungs overinflated and expanded. A continuation of this condition leads to a continually expanded chest wall, or "barrel chest" so commonly seen in emphysemic and asthmatic patients. A patient can position himself so that the secretions are aided by gravity in movement toward the trachea. This artificial assistance is called postural drainage. The terms "bronchial drainage" and "pulmonary drainage" are also frequently used to describe this assistance in getting the material out of the bronchial tree. Before drainage is begun, tight clothing must be removed, the patient must be unencumbered, particularly around the thorax and the abdomen. Ambulatory patients should do some light exercise prior to drainage since this frequently loosens the secretions and facilitates expectoration. Drainage routine should last for at least 15 minutes. Percussion or cupping on the area being drained is helpful. All drainage routines must be done prior to meals since drainage initiates gag reflex and a meal would be lost. Drainage positions for all areas of the lung should be carried out daily on an inclined bed (Figures 1, 2, 3, 4, 5, 6, 7). This can be accomplished easily by placing the feet of the bed on a pair of 15″ high wooden blocks with saucer tops. If the tissues are very dry and if expectoration is difficult, inhaling steam for about 40 minutes can be very helpful.[3] In the case of the child with Cystic Fibrosis,[4] aerosol inhalations are used to help patients expectorate the thick secretion. For humidification, sleeping in a mist tent is also necessary. Several times daily the child must breathe a fine medicated mist using a nebulizer and mouth tube or face mask. This treatment, together with a regular systematic use of postural drainage technique before and/or after aerosol therapy, helps keep the lungs fairly clear.

Coughing is an essential part of postural drainage procedure. Since not all people can cough effectively, some must be taught. The sound of a cough often indicates how good or productive it is. If it is muffled, the mouth is being kept closed. If the sound is high-pitched, the mouth is closing at the end of the cough, and the patient is straining. The cough should have a soft, hollow sound for best results. At the start of the cough a deep breath should be taken. The abdominal muscles should contract firmly pushing against the diaphragm and building up pressure in the thorax. The tongue pressed against the lower teeth allows the soft palate to move downward thereby increasing the pressure. The mouth should be open. When the glottis and the vocal cords open, the cough will explode the air from the mouth carrying the materials with it. If the patient is seated, holding the thighs together will help in the process. In this way the pelvis is held tight and the viscera are kept from moving downward during the explosion phase. Leaning forward while sitting and holding a pillow tightly against the abdominal wall will also assist in the contraction of the abdominal muscles forcing the viscera upward against the diaphragm and increasing the force of the cough.

There may also be some mechanical failure in getting the mucus out of the bronchi. Variations for expulsion should be tried. One successful method is to lean forward, head low over the basin, breathe in, cough, and then hold the breath momentarily to keep the trachea open and allow gravity to assist in sliding the material out.

Patients frequently are taught to perform two coughs in rapid succession. It is not uncommon for the second inspiration to pull the mucus backward into the pharynx making it impossible to expel the fluid and clear the tree, and for this reason it is suggested that this technique not be used.

Failure of the cough may also be due to insufficient muscular force. This is an additional reason for reconditioning. Atelectasis may exist and ciliary action may be interfered with, as occurs in those who smoke.[3] A person with

badly impaired breathing can be compared to the competitor who has been straining to win a race, he is breathing hard and fast, his heart is beating very fast, but unlike the competitor who is using his strong abdominals and diaphragm to help with his labored breathing, the impaired breather is using only the intercostals and the auxiliary muscles. Unlike the competitor who is able to repay his oxygen debt in a few minutes, the impaired breather is piling up carbon dioxide. The primary muscles for breathing are the diaphragm, the abdominals and the intercostals. Most people tend to use just the intercostals for ordinary breathing. Only under stress and for forced inhalation and exhalation will the abdominals be brought into the action. It is imperative that someone with impaired respiration learn to use his abdominal muscles and diaphragm at all times. Instead of resorting to the accessory muscles and panicking when dyspnea occurs, he should be prepared to drive hard with several piston type contractions of the abdominal muscles forcing the diaphragm into faster action until the dyspnea dissipates itself and a regular breathing rate is established. Since this person has serious difficulties in the expiration phase, it is of utmost importance that the abdominals be kept working. It is these muscles, along with the intercostals, that will enable him to expel the air. Before exercises for retraining breathing are practiced, it may be best for the patient to go through the positions for bronchial drainage so that excess secretions which accumulate constantly are removed from the bronchial tree.

In the asthmatic, the diaphragm remains descended or it may undergo small ineffective excursions,[5] the lower chest becomes fixed and only the upper intercostals and accessory muscles of respiration are being used during an attack. In due time this abnormal breathing pattern (use of only upper intercostals and accessory muscles of respiration) becomes habitual and is used even during periods free from asthma.

In airway obstruction, the air in the alveoli is trapped by edema, secretions or inflammation and cannot move out through the bronchioles. In patients with asthma or very early emphysema, there will be a wheeze on expiration as the air flows around the obstruction on its way out through the bronchial tree. If force is used at this time to expel the trapped air, the bronchioles collapse due to the uneven pressures for the pressure in the inflated alveoli has been steadily increasing. When the air is expelled, some pressure from without must be created to equalize the pressure in the air sacs and to slow up the exiting air flow by offering some resistance. If the lips are pursed,[6] the air flow outward can be controlled to a slow stream. This establishes resistance and will prevent the collapse of the bronchioles. This position allows for a steady control "streaming" of the expired air. The air is eased out comfortably by steady pressure of the contracting abdominal muscles and the ascending intercostal muscles.

The purpose behind the altered breathing pattern is: (1) improve the mixing of air in the lungs and to aerate the blood more effectively; (2) use the rib cage and diaphragm more effectively; (3) give the patient a tool by which he can conserve his energy, reducing the amount of dyspnea he experiences; (4) ease the tension and the apprehension his condition produces. The patient should be constantly reminded to purse his lips during exercise to control the outflow of air to prevent the collapse of the bronchial tree and to bring into constant and strong use the abdominals and the diaphragm.

The treatment for the patient with a chronic obstructive airway condition is always directed toward the reversible problems first. Where conditions are not reversible, prevention of further complication is of utmost importance. For persons with early emphysema, asthma, and uncomplicated chronic bronchitis, a nebulizer of some sort is indispensable. With advanced and complicated problems, which in most cases are accompanied by irreversible conditions, disturbed oxygen-carbon dioxide exchange and perhaps some cardiac complication are very likely to occur. Careful use of bronchodilators, antibiotics and assistive respiratory apparatus such as intermittent positive breathing devices[7] gives excellent results. Regular use in the home of the intermittent positive pressure aerosol machine will increase ventilation, assist in making the cough more productive and relieve dyspnea. With medication in the inhalant, the bronchial tree will be dilated and secretions will be made more moist. Antibiotics and steroids, formerly used with some regularity, are now used only for emergencies. There are a number of combination tablets containing sympathomimetic amines,

expectorants, antihistamines and buffers that work well in acute management. An increasing number of therapeutic regimes include epinephrine parenterally, aminophylline intravenously, isoproterenol sublingually and sympathomimetic amines in aerosol form.[3] Regardless of severity, complications, reversible or nonreversible conditions, all persons with any degree of chronic airway obstructions should give up smoking and protect themselves from unnecessary exposure to smoke, such as being in a room or car with persons who are smoking heavily. Avoidance of environmental pollutants should be considered in re-employment. Whatever means can be used to keep household dust and pollutants at a minimum should be employed, particularly for the sleeping area. It seems unlikely that these long term benefits of a physical conditioning program have any specific therapeutic value on the underlying disease process of the bronchial asthma, but they increase cardiovascular and neuromuscular efficiency so that the same amount of work can be done at a lesser oxygen cost with reduced cardiac output and increased cardiac reserve. Scherr[8] originally described a physical conditioning program which included gymnastic activity involving the use of the horizontal bar, medicine ball, rope, swimming and tumbling, as well as "confidence building" activities such as boxing and judo. Activities of this nature have been incorporated successfully in the program at the Sunair Home for asthmatic children, as well as other in-patient and out-patient programs. The psychological benefits occur not only from the group-supportive milieu, but also from the learning of new skills and acquiring greater muscular strength. The experience at the Sunair Home and at the Children's Asthma Research Institute Hospital, Denver, has been that swimming is well accepted and tolerated by asthmatic children. This sport and games that involve bending, throwing and swinging are also of great value in increasing thoracic mobility and correcting postural defects.

Jones, Buston and Wharton,[9,10] in expanding on the original observations of Capel and Smart,[11] found that moderately vigorous exercises such as running from one to two minutes caused bronchodilation with increased forced expiratory volume in asthmatic children but the continuation of this exercise for five to ten minutes resulted in bronchospasm either during the exercise or within ten minutes following it. This post exercise bronchospasm is specific for the asthmatic and cannot be induced either in normal children or in those with other acute or chronic respiratory diseases.

Studies indicate that activities of sports involving intermittent, short bursts of exertion of one to two minutes in duration are much more suitable for the asthmatic than uninterrupted exercise. If more prolonged activity is planned, the post-exercise bronchospasm can be almost entirely prevented by the administration of either isoproterenol or an oral ephedrinetheophylline preparation one to two hours before the exercise.[12]

These exercises designed for the patient with chronic obstructive lung diseases are to: (1) improve ventilation; (2) correct postural deformities; (3) increase the mobility of the thorax; (4) restore a natural breathing pattern.

Instructions to Patients

Strengthening Exercises

Muscles of inspiration may be strengthened by use of weights. Sandbags of different weights from one pound to 15 pounds can be made from canvas or heavy mattress ticking filled with sandy type soil that is dry, or sand if available. The person using the sandbag should lie supine on the floor or the bed with knees bent, feet on floor. Place the sandbag directly over the navel and practice lifting the bag up with the action of the abdominal muscles. The rise, on inspiration, and the fall, on expiration, of the sandbags should be easy and regular with the count of one for the lift and the count of one-two for the fall, with the sandbag settling gently. As this exercise becomes familiar and easy, the sandbag you use should be heavier.

Postural Exercises

1. Arm Circling; "Windmill." Standing with feet slightly apart, describe large circles with both arms three times, then do in reverse direction three times.

2. Trunk Bending. Sitting in a chair with feet apart, breathe out slowly as head is lowered to knees, arms hanging loosely at side. Individual breathes in as he returns to sitting position.

3. Side Bending. Sitting in a chair with feet apart, right arm over head and left arm at side, bend toward the left side, reverse arm and bend toward the right side. Repeat exercise 2 and 3 six times.

Abdominal breathing should be carried out with the patient on hands and knees with head turned to the side or with patient lying half on stomach with top leg and arm in flexed position. As far as possible, air should be breathed in through the nose and out through the mouth.

Exercise 1

Lying on the back with the head supported on a pillow, the shoulders relaxed and the knees bent: Place one hand on the upper abdomen over the angle formed by the ribs, breathe out as much as you can, sinking the upper chest and pulling in the abdomen so that the ribs are pulled down and in; relax and let the air come in, swelling the upper abdomen and expanding the ribs under your hand. Make sure that the upper part of the chest does not rise as you breathe in. Repeat *five* times. With the young children this type of breathing may be taught by placing a small toy on the abdomen and having the patient actively lower it to encourage forced expiration and actively raise the toy to encourage diaphragmatic movement. In order to be sure that the patient is breathing out during contraction of the abdominal muscles, he may be told to hiss air out through his teeth and breathe in through his nose.

Exercise 2

Lying on the back with the head supported on a pillow, the shoulders relaxed and the knees bent: Place your hands on either side of your chest covering the lower ribs so that your little fingers lie on the lowest ribs. Breathe out, pressing with your hands at the end of the breath to force as much air as possible out of the chest. Release the pressure, keeping the hands on the ribs and allow the air to come in under your hands expanding the lower ribs outward. Repeat *five* times. Instead of using the hands on the lower ribs, you may place a folded towel around your lower ribs, grasp the ends of the towel, breathe out as far as you can, tightening the towel to get the pressure at the end of the breath, releasing the pressure as you take a breath in.

Exercise 3

Sitting in front of a mirror: check your posture. See that your back is straight and your shoulders are relaxed. Repeat the first two exercises in this position. Watch your shoulders and upper chest. See that they do not rise as you breathe in.

Exercise 4

Panting: This is the short sharp exhalation which is used to control an attack of breathlessness. Bend forward leaning on a table with your elbows straight: breathe out with short panting breaths, taking in small breaths quickly between each breath out. Make sure that you are forcing more air out of the chest than you are taking in. When you are no longer breathless, slow down your breathing until you are doing Exercise 1. The exercises may cause some wheezing and coughing. This can be expected but it will loosen the mucous in your chest and make it more easily coughed up. Exercises should be done twice a day, resting between each exercise. During the day, be conscious of your breathing so that a new breathing habit using the lower chest and keeping the upper chest and shoulders relaxed is formed.

The breathing rhythm should always be longer on expiration than on inspiration.

The registered physical therapist is qualified to give assistance and training in exercises of respiration. The physical therapist registered in the State of Arkansas are listed on pages 4-5 of Arkansas State Medical Board, Directory of Licentiates and registration law.

Publications containing the description of similar exercises with illustrations for patients distribution have been made available by Breon Laboratories, Inc., 98 Park Avenue, New York, New York 10016; Ricker Laboratories. North Ridge, California 91324; and New York University Medical Center, Institute of Physical Medicine and Rehabilitation, 400 East 34th Street, New York, New York (Patient Publication No. 4). Also a similar booklet is being prepared by this Section on Allergy in the American Academy of Pediatrics.

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Thymic Size in Systemic Lupus Erythematosus

W. S. C. Hare (Royal Melbourne Hosp, Parkville, Australia) and I. R. Mackay

Arch Intern Med 124:60-63 (July) 1969

Radiological anterior mediastinography and tomography in 24 patients with systemic lupus erythematosus (SLE) showed that the mean lateral cross-sectional area of the thymus was 4.1 ± SD 2.3 sq cm, which differed significantly from figures for controls. A ratio of 2.5 was derived to convert the cross-sectional area in square centimeters to an estimated weight in grams. The thymus in established SLE was small (estimated weight in many cases was less than 10 gm), whether or not corticosteroids had been given. Five patients were examined before and three months after beginning treatment with prednisolone. In patients with SLE of acute onset, an appreciable reduction in size was demonstrated in contrast to patients with long-standing disease in whom thymic size was unchanged.

Clinical Uses of Flow-Directed Right Heart Catheter

M. M. Scheinman, J. A. Abbott, and E. Rapaport (1101 Potrero Ave, San Francisco)

Arch Intern Med 124:19-24 (July) 1969

A small flexible nylon catheter was introduced percutaneously and carried into the pulmonary artery (PA) by blood flow. Blood and pressures were obtained from the right ventricle or PA in 86% of 64 patients; 30 critically ill patients were studied in a coronary care unit. The catheter remained in nine patients for at least 36 hours for continuous monitoring. Eleven subjects with angina pectoris were studied with graded exercise loads to obtain objective assessment of drug and surgical therapy. Pulmonary hypertension was present in three of nine patients thought to have mild acquired valvular disease; formal catheterization documented severe mitral valve disease in these three patients. Diagnosis was established in three of five patients with suspected congenital heart disease.



SURGERY at the UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE*

*Under the direction of Gilbert Campbell, M.D., Professor of Surgery.

Effects of Acetazolamide on Concentration Of Free Amino Acids in Aqueous Fluid

Juan Sanchez and Calvin Hanna*

Carbonic anhydrase inhibitors, e.g., acetazolamide (Diamox®) are classed as diuretics. In ophthalmology they are used to lower intraocular pressure. This is thought to occur by suppressing the formation of the aqueous fluid. The free amino acids were taken as a varied group of chemicals to determine the effect of the carbonic anhydrase inhibitor acetazolamide on the concentration of these acids in the aqueous fluid. This study was carried out on subjects prepared for cataract extraction. These subjects were treated identically as nearly as possible except for the prior administration of acetazolamide.

Methods

Aqueous humor samples (50 to 200 lambdas) were drawn through a 27-gauge needle from the anterior chamber from subjects under local anesthesia just prior to cataract surgery. Aqueous humor samples were precipitated with 15 per cent (w/v) aqueous sulfosalicylic acid.[1,2] The supernatant was stored at −68C until used. The free amino acids in these samples were determined using a Beckman-Spinco model 120C Amino Acid Analyzer.[3] Those subjects pretreated with acetazolamide were given 500 mg at 6 p.m. the night before and 500 mg at 6 a.m. the morning of surgery.

Results

Aqueous fluid samples from 19 control and 12 acetazolamide treated subjects were examined. The analysis of all samples for each amino acid was not complete. Occasionally the resolution of the amino acidgraph, the stability of the Amino Acid Analyzer or the small sample size led to some loss of data. Also, the concentrations of some amino acids in the aqueous fluid were too low for statistical comparisons. The remaining data (Table I) was analyzed for statistical significance using the Student T-test and a prob-

TABLE I

Amino Acid concentration (mg/liter) of aqueous fluid of 29 subjects taken just prior to cataract extraction.

Amino Acid	Treatment: without acetazolamide No. samples	X	±S.D.	Treatment: with acetazolamide No. samples	X	
1. asparagine & glutamine	13	0.708	0.059	11	0.910	0.149
2. alanine	15	0.330	0.032	11	0.412	0.085
3. valine	16	0.250	0.017	11	0.360	0.080
4. serine	13	0.180	0.040	11	0.237	0.059
5. threonine	14	0.129	0.063	12	0.196	0.037
6. leucine	16	0.127	0.025	9	0.181	0.051
7. lysine	17	0.123	0.031	10	0.169	0.026
8. arginine	11	0.110	0.025	10	0.138	0.022
9. phenylalanine	14	0.101	0.017	10	0.132	0.039
10. isoleucine	15	0.098	0.050	9	0.181	0.051
11. tyrosine	14	0.093	0.021	10	0.117	0.021
12. taurine*	13	0.061	0.019	11	0.065	0.010
13. histidine	18	0.056	0.021	10	0.090	0.023
14. glycine	14	0.048	0.033	11	0.079	0.034
15. ornithine	17	0.040	0.015	9	0.078	0.033
16. glutamic acid*	13	0.021	0.014	11	0.028	0.017
17. aspartic acid*	13	0.012	.....	11	0.009	.....
18. a-amino-isobutyric acid*	14	0.011	.....	11	0.031	0.015
19. methionine	15	0.027	0.009	9	0.047	0.010
20. tryptophane*	19	0.002	.....	10	0.008	.....
21. proline*	13	0.002	.....	11	0.017	.....
22. citrolline*	13	0.002	.....	11	0.007	.....
23. ½ cystine* and urea*	16	0.001	.....	11	0.005	.....
	13	2.714	0.785	11	2.811	0.842

*All but these amino acids are significant at p = 0.01 or less.

* Departments of Ophthalmology and Pharmacology, University of Arkansas Medical Center, and U. S. Veterans Administration Hospital, Little Rock, Arkansas 72201.

ability value of less than 0.01 was taken as a difference for an individual amino acid between the control and the treated group of subjects.

A number of amino acids, *i.e.,* citrolline, proline, tryptophane, cystine and ∝-amino-isobutyric acid were present in too low concentrations for statistical analysis with the aqueous samples available although the mean values after drug treatment were elevated. Taurine, aspartic acid, glutamic acid and urea concentrations in aqueous samples were not elevated after treatment with acetazolamide. The remaining amino acids were present in much higher concentrations in the aqueous fluid of acetazolamide subjects (Table I). It appears that acetazolamide treatment results in an increase in the concentration of amino acids in the aqueous fluid in a rather non-specific pattern while the concentration of the non-amino acid urea was not changed.

Comments

While the free amino acids in the aqueous fluid of several species of animals have been determined only very recently this has included humans.[1] The effect of acetazolamide on the free amino acids in any physiological fluid or tissue has not been reported. This drug is known to decrease the rate of aqueous and spinal fluid formation by an unknown mechanism and many factors may be involved. On the kidney this agent is the prototype of a class of diuretics. These diuretics inhibit the enzyme carbonic anhydrase and markedly and promptly increase the urine volume. The urinary excretion and content of sodium bicarbonate along with some potassium ion is elevated while the urinary concentration of chloride ion does not change. In theory the inhibition of carbonic anhydrase converts carbon dioxide and water less readily to form hydrogen and bicarbonate ions. As a result there is less hydrogen ion in the nephron cells for exchange with sodium ion and therefore less bicarbonate ion is reabsorbed. At least in the rabbit, acetazolamide appears to suppress the rate of transfer of the bicarbonate ion into the aqueous fluid from blood-aqueous barrier[4] while in man the chloride ion may be utilized for the maintenance of intraocular pressure.[5] With this decreased bicarbonate ion in the aqueous fluid it would be expected that everything being the same the rate of aqueous formation would decrease. This decrease in the transfer of bicarbonate to the aqueous fluid would indicate an altered intracellular content of hydrogen ion. It was expected at the onset of this study that the change in the cell may differentially alter the transfer of the acidic, neutral or basic amino acids into the aqueous fluid. The amino acids are amphoteric and it might be expected that a change in the intracellular content of hydrogen might affect the passage of the amino acids across the blood-aqueous barrier. This change in transfer of amino acids does not appear to occur across the blood-aqueous barrier. Instead, the amino acids appeared to cross the blood-aqueous barrier normally, and the decreased formation of aqueous fluid resulted in the concentration of amino acids in the aqueous fluid.

Summary

The free amino acids in the aqueous humor fluid of subjects prior to cataract extraction was qualitatively and quantitatively determined. Pretreatment with acetazolamide decreased the intraocular pressure and markedly increased the aqueous content of free amino acids but not of urea.

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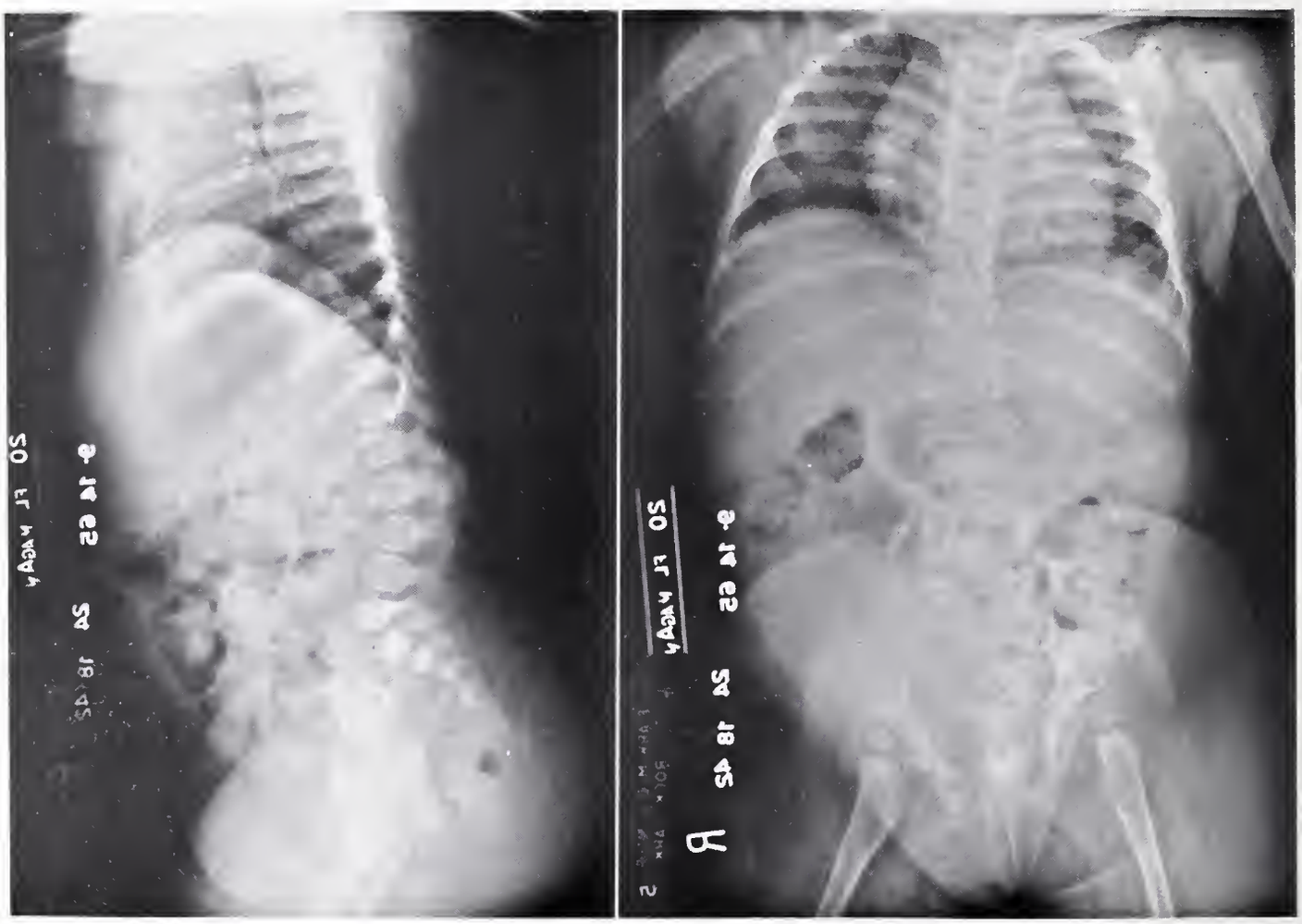
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WHAT IS YOUR DIAGNOSIS?

Prepared by the
Department of Radiology, University of Arkansas
School of Medicine, Little Rock

See Answer on page 153

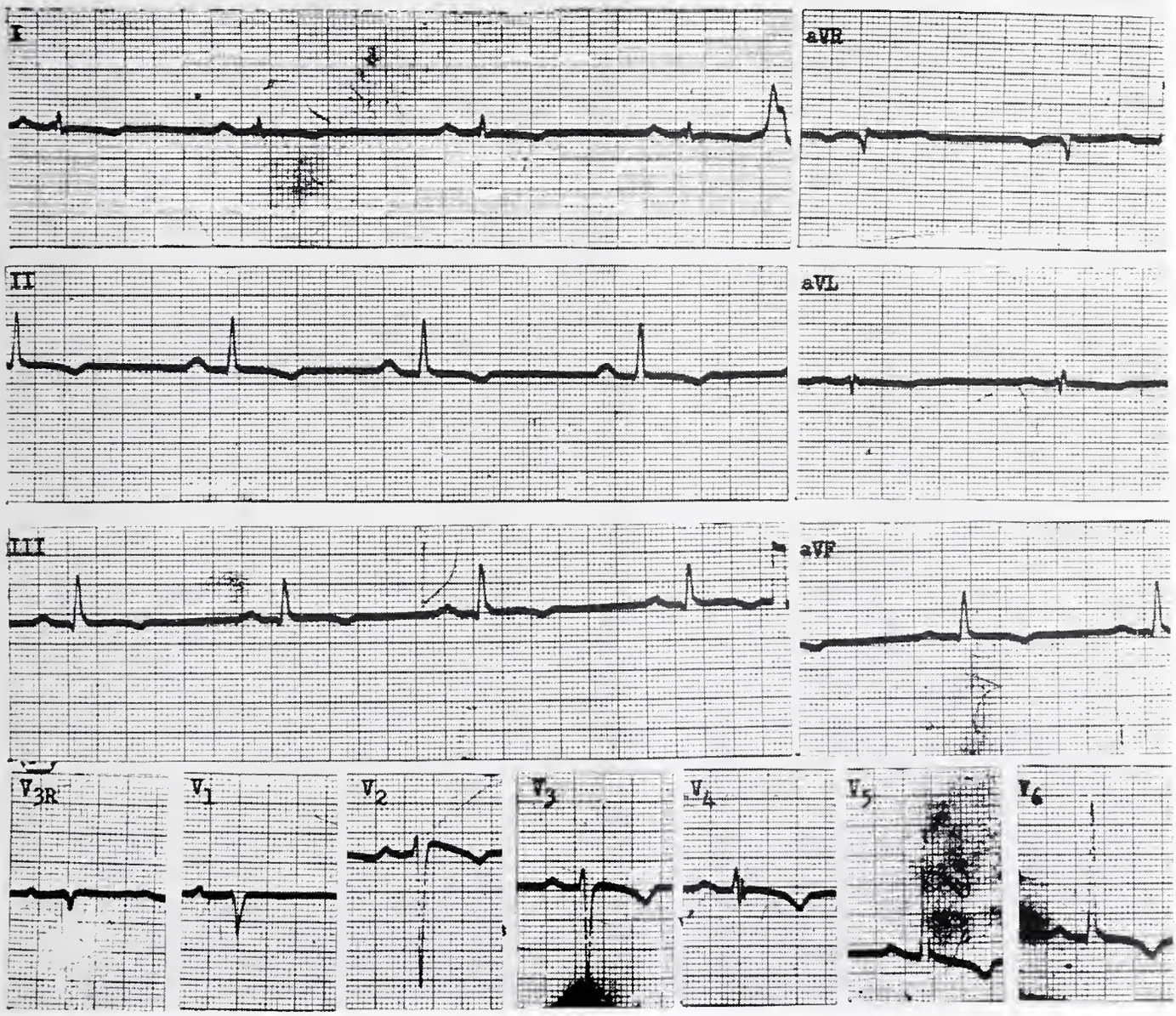


HISTORY: 18-month-old infant with a soft tissue mass overlying the lower lumbar spine since birth. The infant is unable to move the lower extremities.

ELECTROCARDIOGRAM OF THE MONTH

AGE: 46 SEX: Male BUILD: Medium BLOOD PRESSURE: 150/100
CARDIAC DIAGNOSIS: Undiagnosed heart disease with cardiomegaly.
OTHER DIAGNOSES: None.
MEDICATION: Not known.
HISTORY: No information available.

See Answer on page 153



The Department of Medicine, University of Arkansas Medical Center
James S. Taylor, M.D., Professor of Medicine



Arkansas Meat Inspection Program on the Move

Since Enactment of the Arkansas Meat Inspection Act (Act 320) in 1967, the Arkansas State Meat Inspection Program has grown rapidly. Although, only in its second year as a division of the Arkansas State Department of Health and its eleventh month of actual operation it has already brought under inspection approximately 40% of the slaughtering and processing plants in the state not under federal inspection. This represents about 60% of the total volume of uninspected red meats being slaughtered and processed in Arkansas prior to a year ago.

The Meat Inspection Division is presently staffed by five, full-time veterinarians, thirty-eight full-time Lay Meat Inspectors and eighteen private veterinary practitioners who participate as finaling consultants on a as-needed, on-call basis.

All Lay Meat Inspectors are required to successfully complete 12 weeks of intensive training in Federal and State Training Centers covering all phases of slaughtering and processing inspection.

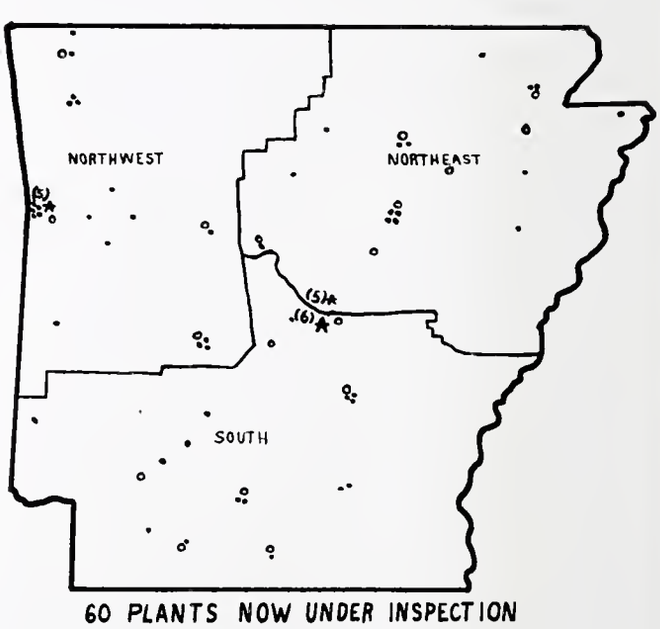
For plants to qualify for inspection a detail survey is made listing minimum changes, (if any) which are needed before its products may receive the "Arkansas Inspected and Passed" mark of inspection. (This is a stamp or legend bearing the outline of the state of Arkansas with the words "Arkansas Inspected and Passed" including an establishment number, inside the state outline.)

Following the detail survey each plant is considered to be in a "phase-in" period during which time a State Meat Inspector is assigned to the plant in an advisory capacity to acquaint the plant owner and other personnel with the requirements of the Arkansas Rules and Regulations. During this phase-in period, the plant makes such changes as have been found necessary during the survey. When the inspector and owner feel all necessary corrections have been made and the District Supervisor concurs, official Arkansas inspection may begin.

Any plant that can produce from disease free animals, clean, wholesome meat and meat products can readily adjust to requirements of Act 320. There is no minimum volume. Arrangements for inspection can be made, to service each plant, no matter how small. Inspection costs are paid *equally* by state *and* federal general revenue funds.

During the first four months of 1969 the Arkansas Meat Inspection Division inspected and passed more than 23 million pounds of meat and meat products, and prevented some *79,867* pound of unclean, unwholesome or diseased meat and meat products from entering commercial trade channels.

To comply with Federal law, (The Wholesale Meat Act,) the Arkansas program must be in *full* operation for all plants by November 15, 1970.





EDITORIAL

Autonomy of Thyroid Nodules

Alfred Kahn, Jr., M.D.

The thyroid is probably the best studied of the endocrine glands, and yet there are still areas of mystery.

One big problem is the decision whether or not to remove a thyroid nodule. This decision would be easier with a better understanding of the patho-physiology. Miller, Horn, and Black at The Henry Ford Hospital (Journal of Clinical Endocrinology, volume 27, page 1264, September 1967) have published on "The Autonomous Functioning Thyroid Nodule In The Evolution Of Nodular Goiter." These authors wanted "to test the hypothesis of Taylor that a functioning nodular was a stage in the evolution of all nodular goiter—. We have repeatedly demonstrated autonomous functioning macro- and micronodules in the same thyroid suggesting that the large nodule functioned in this manner from their origin. If both functioning and non-functioning macronodules have a common origin, then both should have a similar degree of association with the functioning micronodule." They studied 54 patients doing scintigrams before and after giving thyroid stimulating hormone. A scintigram was done on some after l-trodothyronine or l-thyroxine. The results indicated that in the 21 patients with autonomous nodules, 76% had either micro or macro functioning nodules. In 29 glands where the dominant nodule was cold only 4 small hot nodules were found. These authors found functioning micronodules in the same gland where a large functioning nodule was found and their interpretation was that the hod nodules became autonomous very early in their development. To try and prove both functioning and non-functioning nodules had a common source, Miller *et al.* would have expected to find frequent hot micronodules with large cold nodules if there was a common origin, but they actually found hot micronodules in only a small percentage of thyroids with a dominant cold nodule. The authors conclude "hot micronodules evolve with secretory activity from their origin, but they do not support the hypothesis of a common functional stage for all nodules."

Silverstein, Burke, and Cogan have published on "The Natural History Of The Autonomous Hyper-functioning Thyroid Nodule." They have case material in which the hyperfunctioning nodule is associated with hyperthyroidism and in other instances, the patient is euthyroid. They have speculated as to whether cases with functioning autonomous nodules will all become hyperthyroid and whether or not the nodules lose their autonomy. They have long term studies on patients who represented the following courses: persistent autonomy—4 cases; transition from "hot" to warm nodule—1 case; re-establishment to thyroid stimulating hormone dependence—3 cases, and degeneration within an autonomous nodule with re-establishment of normal hormone relationships. It is of interest none of these patients developed hyperthyroidism during the period of study. Moreover, the patterns were exceedingly variable, thus tending to rule out any special pattern.

The endocrine dependency of thyroid palillary carcinoma were studied by Crile (Journal of The American Medical Association, volume 195, page 101, February 28, 1966). He reported on 19 patients with thyroid carcinoma. None of these cases were treated except by oral dosages of desiccated thyroid. The reports that although some

of the patients have radioactive iodine, it was not a therapeutically effective dose. The diagnosis was proved by biopsy in these cases. In 12 cases Crile reports a favorable response. In 7 cases the response was unfavorable and the patient died. Crile prefers desiccated thyroid treatment in thyroid cancer and states that if the nodule is enough like normal thyroid to concentrate iodine, it is probably enough like normal thyroid to have growth suppression. These cases do not escape from control of desiccated thyroid therapy if they once come under control. Most cases who respond to desiccated thyroid treatment will concentrate iodine and visa versa.

Research on the autonomy of thyroid gland nodules has still not provided absolute answers to physicians and surgeons interested in this field.

James Sherwood Taylor

Colonel Taylor (U.S. Army, retired) came to Arkansas in 1951 and immediately volunteered for the clinical faculty of the University. He joined the full-time faculty in 1954 as Associate Professor of Medicine. He was named Professor of Medicine in 1960 and served as Director of the Cardiology Division since 1956. During this period of service to the University, he participated in the teaching of hundreds of students and house officers as well as many post-graduate courses for the practicing physicians of the state; he endeared himself to his colleagues through his honest and competent efforts as a counselor, friend, and physician, and to the State of Arkansas as a loyal adopted son. His students of all ages, his friends, and his colleagues recently dedicated a library* in his name to the Department of Medicine of the University Medical School on the occasion of his retirement to Professor Emeritus on July 1, 1969.

Dr. Taylor's contribution to medicine and cardiology in Arkansas will continue as long as his students practice and teach medicine. The profession salutes him, wishes him well in his retirement, and looks forward to his productive emeritus years.

James E. Doherty
Robert T. Bulloch
Marvin L. Murphy

*Anyone wishing to donate to the James Sherwood Taylor Library Fund should mail their contribution to Dr. Ben Price, 500 S. University Ave., Little Rock, Arkansas 72205.

MEDICINE IN THE NEWS

THE MONTH IN WASHINGTON

Washington, D. C.—The Internal Revenue Service plans to audit the federal income tax returns of physicians and other health practitioners who have received more than $25,000 a year in medicare and medicaid payments.

Plans for the special audit were disclosed by IRS Commissioner Randolph W. Thrower at the first of a series of public hearings the Senate Finance Committee is holding in its investigation of the rising costs of the two government health care programs. He said the Department of Health, Education and Welfare had agreed to require intermediary insurance carriers to use physicians' social security numbers on reports of payments under the program in the future.

Finance Committee Chairman Russell B. Long (D., La.) estimated "possibly as many as 10,000" had been getting upwards of $25,000 a year under the programs. Thrower said the initial audits would be for 1967 and would be limited to those receiving more than $50,000.

Long said that the investigation of the committee's staff so far showed "widespread abuse, and fraud, as well as lax administration."

Robert M. Ball, social security administrator, reported his investigators had looked into more than 700 possible fraud cases under medicare. He said more than 300 of these cases were still in some stage of inquiry, and that 14 had been turned over to the Justice Department for prosecution.

"But these should not be taken as a reflection on the 200,000 doctors participating in medicare," Ball said. He added a bigger problem than outright fraud were "cases that don't quite become fraud."

HEW Undersecretary John G. Veneman told the committee that the Nixon Administration wants congressional authority to stop medicare payments to doctors who overcharge, use inferior supplies or engage in fraud.

"Under present medicare law, there is no authority for the program to deny reimbursement to a licensed practitioner, who has demonstrated a clear pattern of fraud, repeated overcharging of the program or the use of supplies which are inferior or harmful," Veneman said.

"We are recommending authority . . . to discontinue future reimbursement and to put all parties on notice to this effect where on the basis of clear evidence, a finding is made that this is justified by reason of such abuses."

Commenting on the hearings, Dwight L. Wilbur, M.D., president of the American Medical Association, said that the vast majority of physicians serving medicaid patients are not overcharging for their services.

"Most physicians," Dr. Wilbur said, "are acting honorably and with utmost restraint. Fortunately, very few M.D.'s participating in medicaid are guilty of overcharging and otherwise exploiting the program. Such exploitation by a miniscule minority was unavoidable. . . .

". . . The medical profession is making a great effort to identify and weed out dishonest doctors who betray their oath as professional men serving the public. We have been successful in this search, but a few physicians remain who still are not identified. We shall search them out and expose them, for the good of the entire profession."

Meantime, HEW issued a regulation limiting the fees paid by states to physicians, dentists and other health practitioners under medicaid.

Under the regulation, a state's medicaid payment to a physician for a service will be limited, with one exception, to the 75th percentile of the customary charge—the maximum customary fee of 75 per cent of the physicians in the area.

If a state has been paying more than the 75th percentile of the customary charge, it must not exceed the medicare level, about the 83rd percentile. A medicaid official said that only two states may have to roll back their fees, but declined to name them.

After July 1, 1970, states may request permission to increase physicians' fees above the 75th

percentile if two conditions are met:

1. The average percentage increase requested above the 75th percentile on January 1, 1969, may not exceed the percentage increase in the all-services component of the Consumer Price Index (adjusted to exclude the medical component) or if an alternative index designated by the Secretary of Health, Education and Welfare.

2. Evidence must be clear that the providers and the states have cooperatively established effective uitlization review and quality control systems.

The new fee regulation also requires states to revise their medicaid plans to include descriptions and details of their payment structures. A state that wishes to revise its payment structure for practitioners' services or change the payments authorized under it may not do so until the proposed changes have been approved by the Secretary of Health, Education and Welfare or his representative.

States that begin their medicaid programs after July 1, 1969, must arrange their payment structures so that fees do not exceed the 75th percentile of customary charges.

HEW estimated the regulation would result in a saving of $65 million in the first year.

Despite a strong protest by the American Hospital Association, HEW discontinued the overhead medicare-medicaid percentage allowance paid to hospitals, extended care facilities and other institutional providers. It was two per cent for non-profit and one-and-one-half per cent for proprietary institutions. The action was effective July 1, 1969.

Another new medicaid regulation requires states to provide periodic health screening, diagnosis, and treatment for all eligible youths under 21 years of age, effective July 1, 1969.

HEW also established a new classification of institution—called intermediate care facility—eligible to receive federal contributions for the care of aged, blind, or disabled recipients or public assistance is covered in another regulation. This should reduce costs of medicaid by allowing states to relocate substantial numbers of welfare recipients who are now in skilled nursing homes in lower costs institutions, HEW said.

* * *

Dr. Roger O. Egeberg, who has been dean of the School of Medicine, University of Southern California since 1964, was selected to be the new Assistant Secretary of Health, Education and Welfare for Health and Scientific Affairs after a five-month delay.

President Nixon nominated Dr. Egeberg after HEW Secretary Robert H. Finch "reluctantly and regretfully" withdrew his unannounced but widely-publicized selection of Dr. John H. Knowles, director of Massachusetts General Hospital, Boston. Finch said that "the protracted and distorted discussion" about the appointment during the five months the post had been vacant "resulted in a situation in which he (Knowles) would not be able to function effectively in this critical position."

The news media—press, radio and television—generally assigned the opposition to Dr. Knowles to conservative members of Congress, led by Senate Republican Leader Everette M. Dirksen, and to the AMA.

Throughout the public controversy before the appointment, the AMA confined its comment to a short statement that it had suggested several names to Finch for the post and that the Association "favored the appointment of someone who would represent the broadest scope of medicine and would not be too closely oriented to any one segment of medicine or the health field." Knowles was not one of the physicians on the AMA list.

A few days after the nomination of Dr. Egeberg, Dr. Dwight L. Wilbur, the AMA President, said:

"During the last five months the American Medical Association has been identified repeatedly as a force opposing appointment of Dr. John H. Knowles as Assistant HEW Secretary for Health and Scientific Affairs.

"We held our silence during the last months of nationwide publicity because we agreed with Secretary Finch to make our suggestions to him and then say no more. We did that. The Knowles protagonists obviously did just the opposite . . .

"In a true sense, we never opposed Dr. Knowles. But we did not support him because we had alternative recommendations."

Those recommended by AMA for the position, Dr. Wilbur said, included:

—Dr. W. Clarke Wescoe, former Chancellor of the University of Kansas, "who withdrew soon after because of personal reasons."

—Dr. Richard S. Wilbur, Palo Alto Clinic, Chairman of the Council of the California Medical Association, and former Chairman of the

Board of California Blue Shield, "who happens to be my nephew, a fact which complicated the situation, but who AMA felt was a well-qualified man for this position."

—Dr. John R. Hogness, Dean of the University of Washington School of Medicine, "who serves in the AMA House of Delegates, at high level in the Association of American Medical Colleges, and who has many other distinguished achievements."

The AMA commended the selection of Dr. Egeberg. In a telegram to Finch, Dr. Wilbur said:

"We look forward to a productive relationship with you and Dr. Egeberg in advancing the health care system for the benefit of all the American people. There are many complex factors involved that will call for the wholehearted dedication and contribution of all in the medical profession and in government."

"We believe Dr. Egeberg will be able to bring about the necessary close coordination between government and private sectors in the health care system," Dr. Wilbur said in a supplementary statement. "This is vital to constantly advance and expand the ability to provide quality health care for all Americans."

Dr. Egeberg, 65, is a large, bluff man of Norwegian stock who demonstrated a sense of humor at his first news conference. He is a member of the AMA and a diplomat of the American Board of Internal Medicine. Generally considered a moderate liberal on health matters, he served on several advisory commissions during the Kennedy and Johnson Administration and on the state level in California. One of his major interests has been health care of the poor and he arranged for the USC medical school to be the medical consultant for the neighborhood health center in the Watts district of Los Angeles.

At his first news conference in HEW, he classified delivery of health care as almost the department's number one problem. He said medicare now is "rather well established" in solving a problem. But medicaid, he said, "has run afoul of a number of things, and I don't know that one can blame any one person or any group for this."

A member of the army medical corps in World War II, he was personal physician and aide-de-camp to General of the Army Douglas MacArthur, 1944-45.

NAPNES Director Testifies

Mrs. Rose G. Martin, Executive Director of the National Association for Practical Nurse Education and Service, said before the Sub-Committee on Long-Term Care of the U. S. Senate that in face of the present critical shortage of nursing personnel that it was important to recognize that some LPN's licensed by waiver have, through experience and tutelage by physicians, developed competency equivalent to or greater than many of the graduates of State-approved schools.

"To remove such nurses from their positions would, we believe, be detrimental to the welfare of the patient they are now serving."

ANSWER—Electrocardiogram of the Month

RATE: 40 RHYTHM: Sinus Bradycardia
PR: .26 sec. QRS: .09 sec. QT: .50 sec.

SIGNIFICANT ABNORMALITIES:

Prolonged P-R interval.
Pralanged Q-T interval.
Delayed intrinsicoid left.
Abnarmal T changes all leads.

INTERPRETATION: Abnarmal

Sinus Bradycardia.
Incomplete A-V block.
Left ventricular hypertraphy.
Suggest possible hypacalcemia.

ANSWER—What's Your Diagnosis?

DIAGNOSIS:

Meningomyelocele.

X-RAY FINDINGS:

Widening of the interpedicular spaces af the lumbar regian with defarmities af the lumbar vertebral bodies in the same region.

RESOLUTIONS



BE IT RESOLVED, that the Garland County Hot Springs Medical Society pay special tribute to our recently departed member, Dr. William E. Gray. Dr. Gray possessed superior knowledge and ability in his specialized field of Roentgenology, and he exhibited a profound dedication to his work that has probably not been surpassed during the history of our Society.

BE IT FURTHER RESOLVED, that we acknowledge our debt for his contribution to the community and to the medical profession.

BE IT FURTHER RESOLVED, that a copy of this Resolution be sent to his wife and family, to the STATE MEDICAL JOURNAL, to the local press, and be spread on the minutes of the Society.

Ralph M. Patterson, M.D., President
Louis R. McFarland, M.D., Secretary
Gaston A. Hebert, M. D., Chairman
Resolutions Committee

THINGS TO COME



State Meetings

As the deadline for this issue arrives, two statewide meetings of major interest are being held. August 15-16 marks the 22nd Annual Scientific Assembly of the Arkansas Academy of General Practice. Held for the first time in Fort Smith, the session will be reported on more fully in the Journal's October issue.

A combination of more than 40 organizations, state offices and agencies, and professional societies have, through the summer, been involved in the organization and planning of the First Arkansas Conference on Emergency Health Services. It, too, will be covered in the October issue.

Caduceus Club Schedules Activities

The Arkansas Caduceus Club will hold an organizational meeting and scientific session beginning at 9:00 a.m., October 4th, at Ricks Armory in Little Rock. The Razorbacks play TCU that Saturday night (October 4th) in Little Rock. There will be a box lunch before the game and a buffet supper after the game for Caduceus Club members.

New Edition of California RVS

A new edition of the *Relative Value Studies* will be available October 1, 1969. "RVS" is a complete listing of procedures performed by physicians. There are also unit values which indicate the relationship of values of services to each other. Copies may be obtained by writing Six-Ninety-Three Sutter Publications, Inc., 693 Sutter Street, San Francisco 94102. New edition price, $3.50.

OBITUARY

Dr. Virgle E. Lyons, Sr.

Dr. Virgle E. Lyons, Sr., of North Little Rock died July 9, 1969. He was 59 years of age.

A graduate of the University of Arkansas School of Medicine, Dr. Lyons had practiced in North Little Rock since 1934 except for five years of service as a Lieutenant Colonel in the United States Army.

Dr. Lyons was a member of the Pulaski County and Arkansas Medical Societies and the American Medical Association.

Survivors are his wife, Mrs. Mary Ellen Huddleston Lyons; one daughter; and one son, Dr. Virgle E. Lyons, Jr.

* * *

Dr. William E. Gray

Dr. William E. Gray of Hot Springs expired July 12, 1969, at the age of 64.

A graduate of the University of Arkansas School of Medicine in 1929, Dr. Gray was a staff member of both St. Joseph and Ouachita Memorial Hospitals in Hot Springs.

Dr. Gray was a Fellow of the American College of Radiology and a member of the Radio-

logical Society of North America, the Garland County and Arkansas Medical Societies and the American Medical Association.

Survivors include his widow; a daughter; and a brother, Dr. Edwin F. Gray of Little Rock.

* * *

Dr. William C. Hays

Dr. William C. Hays of Marianna died July 26, 1969. Born in Mississippi, he was 53 years old.

Dr. Hays received his medical degree in 1940 from the University of Louisville School of Medicine. A veteran of World War II, he was a former Lee County coroner.

Dr. Hays was a member and former president of the Tri-County Medical Society and also held memberships in the Arkansas Medical Society and the American Medical Association.

He is survived by his wife, a son, a brother and two sisters.

* * *

Dr. Ben N. Means

Dr. Ben N. Means of Little Rock died July 26, 1969. A native of Malvern, the former Chief of Staff at Arkansas Baptist Medical Center was 58.

Prior to his graduation from the University of Arkansas School of Medicine in 1944, Dr. Means had been a high school athletic coach and is remembered for his own collegiate athletic accomplishments at Henderson State College in Arkadelphia.

He was a member of the Arkansas Academy of General Practice, Pulaski County and Arkansas Medical Societies, and the American Medical Association.

Dr. Means is survived by his wife and their two daughters.

* * *

Dr. Euclid M. Smith

Dr. Euclid M. Smith of Hot Springs died July 30, 1969, as a result of an automobile accident. The tragedy occurred at 1:30 p.m. immediately after Dr. Smith had left a luncheon held in his honor by fellow staff members of the Benton Unit of the State Hospital. Dr. Smith had resigned to take a position in Hartsill, Alabama.

A native of Honey Grove, Texas, Dr. Smith was a veteran of World War II. He was a graduate of the University of Arkansas School of Medicine, a trustee Emeritus of same, a Fellow of the American College of Physicians, a member of the Garland County Medical Society, a past president of the Arkansas Medical Society, and a member of the American Medical Association.

Survivors include his wife, Mrs. Madge Wootton Smith, and two daughters.



PERSONAL AND NEWS ITEMS

Record Corrected

In the June issue of the Journal of the Arkansas Medical Society, it was reported that the House of Delegates approved in April an affiliate membership for 1969 for Dr. H. Clay Chenault of Hot Springs (Garland County). The reason for the exemption was listed as "retirement." At its meeting on August 17th, the Council of the Society directed that the records show that exemption was granted to Dr. Chenault because of a disability preventing the practice of medicine.

Dr. Bailey Elected

Dr. Ted Bailey of Little Rock has been elected President of the Southern Section of the American Laryngological, Rhinological and Otological Society (The Triological Society).

Recently elected officers at Memorial Hospital in Conway include Dr. Bob Banister, Chief-of-Staff; Dr. Robert L. Clark, Vice-Chief; and Dr. Ann Poindexter, Secretary.

Dr. Stern Exhibits

Dr. Howard Stern of Pine Bluff has recently experienced one of the artist's more satisfying accolades. Some of the results of more than forty years of capturing beauty with a camera

were exhibited at a one-man show through July 25th at the Southwest Arkansas Arts and Science Center in Pine Bluff's new Civic Center.

Dr. Hickey Resigns

Dr. Thomas H. Hickey has resigned as mayor of Morrilton after serving his fellow citizens seven years as that city's chief executive.

Dr. Stevens Promoted

Dr. Willis M. Stevens, Jr., a native of Strong, has been promoted to the rank of major, serving in the Army Medical Corps as post surgeon of the Pine Bluff Arsenal.

Dr. Goldstein Elected

Dr. Davis W. Goldstein, a founder of the Cooper Clinic in Fort Smith, was elected National Secretary of the Fifty Year Club of American Medicine at the recent A.M.A. convention in New York City.

Doctors Lead Panel

Doctors J. M. Stalker, C. W. Taylor, and Troy Raney headed a panel discussion on doctor-nurse communications at a July meeting of the Batesville-Newport District of Registered Nurses.

Dr. Campbell Speaks

"The History of and Advances in Cardiac Surgery" was the title of an address by Dr. Gilbert Campbell, Head, Department of Surgery, University of Arkansas School of Medicine. It was delivered before those in attendance at the Arkansas Medical, Dental, and Pharmaceutical Associations meeting held earlier this summer in Hot Springs.

Doctors Aid 4-H Efforts

Independence County Medical Society members, Doctors Bob Smith, James Stalker, and Jim Lytle gave free medical examinations to participants in that area's 4-H summer camp.

Winners of the Health Activity project competition were presented gold watches by Dr. Ben N. Saltzman of Mountain Home on State 4-H Club Day, July 25.

Winners and their topics were: Anthony Brown of North Little Rock, "Health as a Challenge"; and Kathy Davis of Glenwood, "Smoking and Health." The recipients, in a letter to the Society, wish it known to the membership that they consider the awards a high honor and are appreciative of the kindness extended them.

Dr. Lewis Makes Announcement

Arkansas Heart Association President, Dr. W. Sexton Lewis of Little Rock, announced that Coach Frank Broyles will be the Honorary State Chairman for the Association for 1969-70. Dr. Lewis seeks aid and active participation in the organization's planned large scale education drive for this year. Their goal is to have every citizen in Arkansas informed and educated concerning our Number One Killer and the measures to be used in its prevention.

Dr. Parker Attacked

Regrets and a sincere desire for his speedy and complete recovery are sent to Dr. B. G. Parker, of Booneville, who was severely beaten as he entered his home. On the same evening, his office safe was stolen. Outcome of the investigation, which was directed toward the apprehension of the assailant and the burglar and their possible connection, is not known as this publication goes to press.

Physicians Active in Rotary

Dr. John McCullough Smith of Little Rock, past governor of Rotary International, District 615, has been meeting with local residents of Jacksonville interested in obtaining a Rotary charter for that city. Dr. Smith is aiding their organizational effort with his experience and counsel as a long-time active Rotarian.

Dr. Ben N. Saltzman continues his service in Rotary work. Having been a trustee of Rotary International, he has just been announced by the civic club's International President, James F. Conway of Rockville Centre, New York, as his choice for the Rotary International nominating committee, to serve 1971-72.

Doctor and Mrs. H. W. Thomas

Dr. and Mrs. H. W. Thomas of Dermott bade their son and daughter-in-law, Dr. and Mrs. Al Thomas, farewell on July 4th. Fittingly, Captain Thomas and his wife were leaving for Brooks Air Force Base in San Antonio, where he will receive flight surgeon training in preparation for his duties beginning this fall at Shaw Air Force Base, Sumter, South Carolina.

Dr. Kirkley Is President

Dr. John Kirkley has recently been elected to serve as president of the Downtown Lions Club of Jonesboro. Congratulations are extended and hope for a successful term of office is expressed.

College Honors Dr. Robinson

Dr. John M. Robinson, a Little Rock physician who has been practicing for 67 years, received the Shield and Citation of Merit award July 31, which was also his 90th birthday, from his alma mater, Rust College at Holly Springs, Mississippi, for outstanding civic and medical leadership. Dr. Robinson, a native of Pickens, Mississippi, is a life member of the American Medical Association, the Academy of General Practice and the Arkansas Medical Society.

Harrison Has New Medical Facility

Dr. Van Smith, internal medicine, has recently opened his just completed Diagnostic Clinic located at North Pine and West Bower Streets in Harrison. Dr. David Martin of Valley Springs has already set up general practice within the facility.

The Searcy Clinic Adds to Staff

Three Searcy physicians, Thomas A. Formby, Jack R. Gardner, and Stanley S. Schwartz of the Searcy Clinic, announce the recent addition of Dr. Dale Morris of Little Rock in their association. The clinic is located at 910 East Race Street in Searcy.

Doctor Locates in Morrilton

Arkansas Medical Society member and 1964 University of Arkansas School of Medicine graduate, Dr. L. R. Munos of Little Rock, has entered the general practice of medicine and surgery in partnership with Dr. Clifford L. Evans. A former flight surgeon and veteran of Vietnam, Dr. Munos is located at 200 South Moose Street, Morrilton.

Dr. Hayden Locates

Dr. William F. Hayden, who formerly practiced in Forrest City, will now be in Suite 403, Donaghey Building, Little Rock, for the practice of surgery. He is completing a residency in that city at this time.

Surgeon Returns to Jonesboro

Dr. John C. Faris has returned to Jonesboro where he will re-enter the roster of that locale's practicing physicians. Dr. Faris was a surgeon there for many years prior to leaving that city. He returns now after performing the duties of chief of surgery and chief of staff at the Cotton Belt and Four States Hospitals, respectively, in Texarkana.

Dr. C. C. Long Announces New Associate

The city of Ozark has attracted a new doctor. Dr. C. C. Long has recently made known the association with him of Dr. David E. Blanton of Detroit, Michigan. Dr. Blanton is a University of Arkansas School of Medicine graduate, class of 1966, and is just discharged from the United States Navy.

Clinic Changes Address

The DeQueen Clinic, Ltd., has moved into its new building located on Highway 70 West in DeQueen, Arkansas.



DR. RAYMOND E. BUIRGE is a new member of the Baxter County Medical Society. Born in Mason City, Iowa, he comes to Mountain Home from twenty-five years of practicing and teaching in Minneapolis, Minnesota.

Receiving his pre-medical education at Drake and Duke Universities, Dr. Buirge obtained his medical degree from Duke University Medical School and his M.S. in Surgery from the University of Minnesota in 1939. After internship and residency in the University of Minnesota Hospital, he became in succession: Teaching Fellow, instructor and, from 1946-1968, clinical instructor in Surgery, University of Minnesota.

Dr. Buirge is certified by the American Board of Surgery and a Life Member, American College of Surgeons. His office address is 512 South Baker Street, Mountain Home.

Jefferson County Medical Society announces DR. YUM Y. KING as a new member. Dr. King was born in Canton, China.

In 1958 he was graduated from Arkansas A. and M. State College in Monticello and became a 1962 graduate of the University of Arkansas Medical School. Internship was completed at

the Hillcrest Medical Center in Tulsa, Oklahoma, and a residency at the University of Arkansas Medical School.

Dr. King lists his office address as 1008 West Eleventh Street, Pine Bluff, where his type of practice is Ophthalmology.

DR. JOHN SAMUEL WILSON is a new member of the Ashley County Medical Society. A native of Eudora, Dr. Wilson completed undergraduate training at the University of Miami and the University of Arkansas.

Dr. Wilson's medical degree was conferred by the University of Arkansas School of Medicine in 1966 and his internship was completed at Keesler Air Force Base Hospital.

Dr. Wilson finished his military obligation at Maxwell Air Force Base and has just settled in Crossett. A general practitioner, his office is located at 310 Main Street.

Cleburne County Medical Society has added to its membership DR. RICHARD ALLEN HINKLE. Born in Conway, he now resides in Quitman.

Dr. Hinkle's medical degree was obtained at the University of Arkansas School of Medicine, 1945, and he interned at Medical and Surgical Hospital, San Antonio, Texas. A residency was done at Baptist Memorial Hospital, San Antonio.

A former president of the Hunt, Rockwell, Collins, and Texas County Medical Society, Dr. Hinkle is now engaged in general practice located on Highway 25 West, Quitman.



BOOK REVIEWS

INTERNAL MEDICINE IN WORLD WAR II, Office of the the Surgeon General, Department of the Army, Washington, D. C., 1968.

This book will be of special interest to Internists and especially Internists who are oriented toward military medicine. The volume is written by various authors. It is well illustrated and has numerous charts. It is of considerable historic significance and will unquestionably be used as a reference in the future. Of particular interest to this reviewer was the chapter on Viral Hepatitis which was exceedingly well written, and for that matter is characteristic of the entire volume. The chapter on Psychosomatic Medicine was also interesting. This book is hardily recommended to all Internists. Other physicians will find it interesting also.



Hormones and Pulmonary Effects of Tobacco: II. Progresterone

S. R. Short and D. M. Aviado (Univ of Pennsylvania School of Medicine, Philadelphia)
Arch Environ Health 19:59-69 (July) 1969

Progesterone (1 to 5 mg/kg) administered subcutaneously, daily for seven days, altered the pulmonary response of the anesthetized rat. There was a reduction or blockade of the bronchoconstrictor responses to the following procedures: inhalation of cigarette smoke and intravenous injection of nicotine, acetylcholine and histamine. On the other hand, the bronchodilator responses to cigarette smoke and isoproterenol were not influenced by progesterone. The relation of these observations to the anti-emphysematous action of progesterone requires further investigation.

Congenital Rubella: Pathogenesis and Immunology

J. A. Dudgeon (Hosp for Sick Children, London)
Amer J Dis Child 118:35-44 (July) 1969

Fetal infection is initiated by the viremia of primary maternal rubella; re-infection does not appear to lead to fetal damage. Virus passes to the placenta causing a villous placentitis and damage to vascular endothelium and is then disseminated via the fetal bloodstream. Cellular damage results from mitotic-inhibitory and cytolytic effects and leads to impairment of blood supply. The main risk of fetal damage follows rubella in the first trimester but deafness and microcephaly may occur up to the 24th week of gestation. Higher incidence of fetal infection is probably determined by gestational age, virus dosage, and possibly, variation in strain virulence.

TUBERCULOSIS  ABSTRACTS

Sponsored by Arkansas Tuberculosis and Respiratory Disease Association

HOME CARE OF CHRONIC RESPIRATORY DISEASE

In an effort to reduce the number of hospital readmissions or prevent permanent hospitalization of patients with chronic respiratory insufficiency, a Home Care Program was established 10 years ago by the Winnipeg General Hospital. Paramedical personnel play an important role in the successful operation of the program at low cost.

In 1958 the Winnipeg General Hospital (Manitoba, Canada) established a "Home Care Program" for patients with chronic respiratory insufficiency. It was hoped that repeated hospital admissions or permanent hospitalization for such patients would prove unnecessary. This report is concerned with the experience during the first 10 years.

Patients with repeated hospital admissions over a period of ten years or with persistent hypoxia and hypercapnia, despite intensive therapy, were given high priority for admission to the program. The suitability of the patient was judged by his medical history and physical status, respiratory function, home and family situation, and medical and paramedical requirements.

During the 10-year period the 148 admissions spent a total of 71,247 days on the program. The average was 482 days. There were 70 deaths (47 per cent). The average length of time on the program of those who died was 361 days.

Of 14 patients admitted to the program between 1958 and 1962, only one is alive at the time of this report. Of 39 admitted between 1963 and 1965, 15 (48 per cent) are still alive.

Rehospitalization was required for 82 patients, or 55 per cent. However, the total hospitalization of these patients was 4,078 days, and they were on the Home Care Program only 5.7 per cent of this time.

COST OF PROGRAM

The cost of the program for one year (1967) was $15,262.69. The cost per patient per year was $193.20, or 53 cents a day. The costs include maintenance of equipment and administration as well as physician and nurses fees, homemaking service, transport, meal delivery, and oxygen. In Winnipeg this annual cost would cover only four or five days in an acute-care hospital bed; seven to eight days in a chronic-care hospital, and 10 to 12 days in a nursing home.

Financing of the program is from funds of the Manitoba Hospital Commission and from a provincial government rehabilitation health grant. A few patients may be asked to contribute to the cost on the basis of their reported taxable income, but this is rare. Intermittent Positive Pressure Breathing (IPPB) equipment is loaned to the individual patient from a central pool operated by the provincial government.

Patients thus far admitted to the study were all suffering from a chronic illness, principally respiratory, cardiac, neurological, or malignant disease.

The program is administered by a medical director, or secretary, and a nursing coordinator who serve as a "health team" in providing the medical and paramedical services required by the patient. The team has responsibility also for the dissemination of reports to and from other agencies active in the program.

In 1967 nurses of the Victorian Order of Nurses made 1,560 visits to the patients at home. Reassessment of the patient's condition was made at intervals of from two to six months in the outpatient clinic of the hospital. When necessary, the resident physician assigned to respiratory disease visited the patient at home.

OTHER SERVICES

Provision is also made for the services of such other paramedical personnel as inhalation therapists and physiotherapists and, where called for, a homemaker to assist the family. Although

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Reuben M. Cherniak, M.D.; Robert G. Handford, M.D., and Edith Svanhill. *The Journal of the American Medical Association*, May 5, 1969.

the majority of patients go to the hospital for physiotherapy, a physiotherapist on occasion may visit the home. Regular communication is maintained with patients who live in the country some distance from the hospital.

In the care of chronic respiratory disease patients, the measures used have been designed primarily to mitigate functional disturbances and to prevent exacerbations of acute respiratory insufficiency. The majority of these patients had chronic obstructive pulmonary disease. Among them resistance to airflow was a major problem, probably due to secretions, loss of elasticity, and/or bronchospasm. Care of these patients has been directed at reducing the work of breathing, increasing alveolar ventilation, and improving exercise tolerance.

Reduction in secretions was accomplished by removal of irritants, particularly cessation of smoking; by saline douches of the nasal passages in patients with postnasal discharge; and by prompt and vigorous treatment of infection.

By adequate hydration and postural drainage, elimination of secrtions was improved. Bronchospasm was relieved by effective oral and aerosol administration of bronchodilators. For many patients with chronic obstructive lung disease who were unable to take a deep breath and had inadequate alveolar ventilation persistently, IPPB was provided at home.

INCREASED MOBILITY

Diaphragmatic breathing training was a part of the program, as was gradual increase in physical activity. Although excessive physical activity was avoided during an acute illness, invalidism was discouraged. General physical fitness improved with reasonable physical activity through gradually increased exercise. This ability to increase mobility and exercise tolerance improved mental outlook.

Although it is disappointing that the life span of the patients on the program was not longer, it must be emphasized that the prerequisites for admission were stringent. The real benefits cannot be deduced from the number of hospital readmissions and the mortality statistics. Several patients with severe insufficiency were sent home even though it was realized they might have to be readmitted to the hospital. In several instances, patients were discharged from the hospital to spend their last few days at home.

Care of the patients was primarily centered around paramedical services rather than medical. The cost of home visits by residents was only a small part of the total cost of the program. Paramedical personnel should certainly be considered an integral and essential component of the management of patients with chronic respiratory insufficiency.

The program made prolonged stays in the hospital unnecessary, and likewise long confinement in nursing homes or extended care institutions. The patient and his family responded to the opportunity for him to remain in comfortable and familiar surroundings during the late phases of his illness.



Angiograms, Laminagrams, and Lung Scans in Emphysema

F. R. Beerel *et al.* (Millard Fillmore Hosp, Buffalo, NY)

Arch Intern Med 124:8-12 (July) 1969

Pulmonary vascularity, depicted by lung scanning, angiography, and mid-thoracic laminagraphy, was evaluated in 18 patients with pulmonary emphysema. On the basis of the present study, a lung scan is a satisfactory routine method for evaluating pulmonary vascularity in emphysema; however, if any question exists a pulmonary angiogram should be obtained, particularly if surgery is contemplated. Results of lung scans repeated at intervals up to 15 months were satisfactorily duplicated.

Urinary Steroids in the Prediction of Response to Adrenalectomy or Hypophysectomy

H. Atkins et al (Guy's Hosp Medical School, London)

Lancet 2:1261-1263 (Dec 14) 1968

Thirty-one patients with advanced breast cancer and negative discriminant functions were treated surgically by hypophysectomy; 43 discriminant-positive patients were treated by adrenalectomy and oophorectomy. The success rates were 13% and 30% respectively.

October, 1969

THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 66 No. 5

FORT SMITH, ARKANSAS

OCT 23 1969

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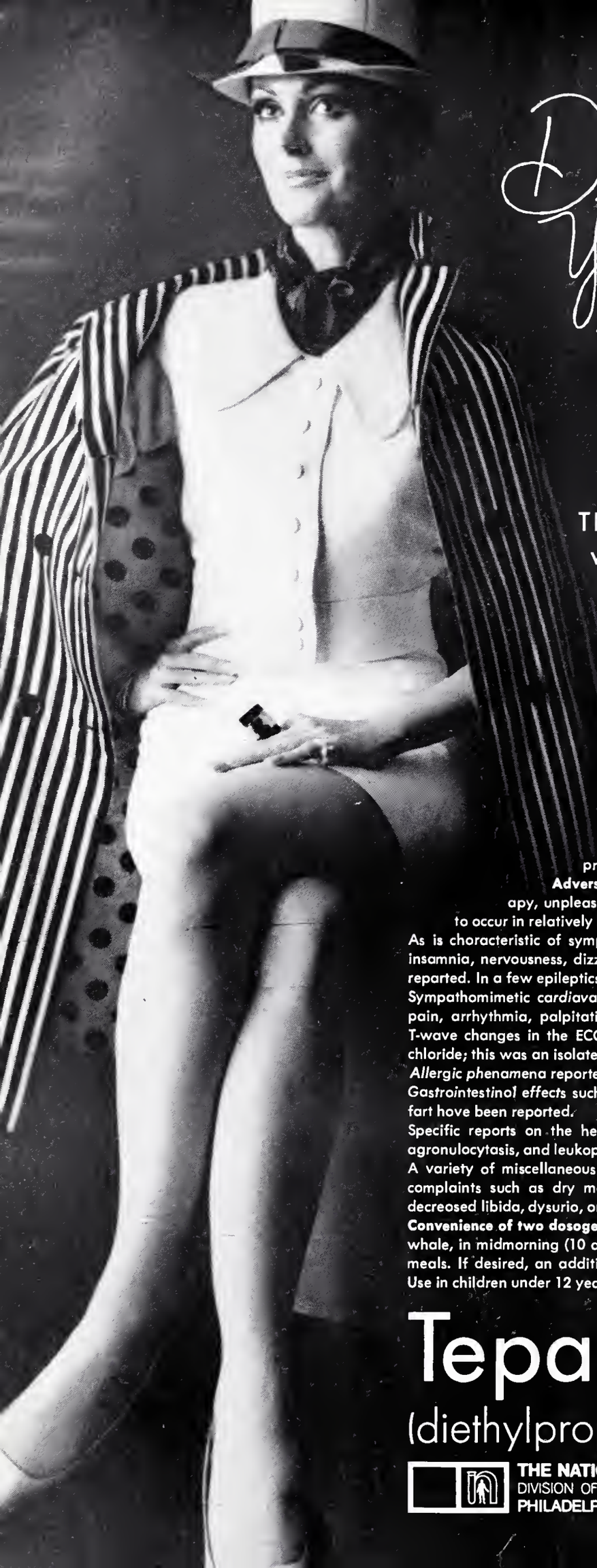


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Sympathomimetic *cardiavascular effects* reported include anes such as tachycardia, precardial pain, arrhythmia, palpitation, and increased bload pressure. One published repart described T-wave changes in the ECG af a healthy young male after ingestion af diethylprapian hydrochloride; this was an isolated experience, which has nat been reparted by athers.

Allergic phenamena reported include such canditians as rash, urticaria, ecchymosis, and erythema.

Gastrointestinol effects such as diarrhea, canstipatian, nausea, vamiting, and abdaminal discomfart hove been reported.

Specific reports on the hematopoietic system include twa each of bone marrow depression, agronulocytasis, and leukopenia.

A variety of miscellaneous adverse reactions have been reparted by physicians. These include complaints such as dry mauth, headache, dyspnea, menstrual upset, hair lass, muscle pain, decreosed libida, dysurio, ond palyuria.

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THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

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VOLUME 66 • OCTOBER, 1969 • NUMBER 5

Care and Cultivation of the Clinical Intellect

Edmund D. Pellegrino, M.D.*

The most pleasant task of the commencement speaker—perhaps his most useful one, and the one I hasten to perform—is to offer congratulations to the graduating class, their families and teachers. Your combined efforts will surely fructify in many years of service to men and society. I welcome today's graduates in all the health professions warmly as colleagues and add my personal wish that they will find in health and medical care, at least, the same excitement and satisfaction that I still find. You have all chosen a way of life which will be not only a means of livelihood and service, but also a personal fulfillment in proportion to the extent that you give of yourself to those who seek your help.

Commencement speakers are expected to utter momentous words which will presumably inspire the young to face the arduous labors of the years ahead. Several obstacles exist—the "generation gap," the real difficulties of saying something original and your justifiable impatience to get to the post-graduation congratulations and festivities—all of these conspire against any pretensions that I might entertain.

I intend something more humble this afternoon—a personal disquisition on a most crucial dimension of your professional lives—your clinical intelligence, its cultivation, maturation and senescence. This is something you all share as health professionals. For, it is proper cultivation of the clinical intellect which defines what is unique about the clinician—I include as clinicians *all* who directly bring expert knowledge to the care of patients. The health of the clinical intellect will determine your utility to society and your own happiness as a person.

When you walk out of this hall this afternoon, officially designated as Doctors in Medicine, Nurses, Pharmacists or Allied Health Professionals, you will be making a profession—that is, declaring aloud to society that you possess special knowledge and skills. When you truly embrace that which you profess, then your profession is authentic; everytime you fail to do so, you run the risk of pretension and even of hypocrisy.

The matter is one of morality and I will state the principle without obfuscation—each time any of us fail to bring to our patients the full benefit of what modern medicine can offer, we are guilty of a moral and an intellectual lapse. This is a harsh criterion in a world beset by moral relativism and seduced by psychologism into excusing itself from responsibility and culpability.

The health professions confront too closely the inner being of humans in distress to be let off so easily. Let us always remember that the patient has no means whereby he can evaluate competence. The moral initiative rests heavily and solely upon us and the duty to keep the clinical intellect always healthy becomes the prime human value to be guaranteed by the moral health professional.

(I) The clinical intellect has two component parts which must be sound, if we are to avoid any semblance of pretense. They are clinical competence and clinical conscience. Let us dissect these free of each other for a few moments.

(A) By competence, I mean possession of knowledge and skills sufficient to an *optimal* solution of a patient's problem, and consistent with the nature of the declaration we make to our patients and colleagues and with our roles in the Health Care Team. It is a compound of usable information constantly refurbished and applied after careful observation and logical thought have revealed what the patient needs. It implies the care and quiet assurance of the artisan. It does not over-reach itself. It knows when to retreat. It is not the automatic accom-

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paniment of brilliance or encylopedic knowledge which may even inhibit its growth. It is, however, achievable by an intelligent person with the will for long-life, critical, self-examination.

We cannot define precisely the point at which a given professional achieves a morally acceptable portion of clinical competence. However, there are several definable stages in its maturation against which we can measure our progress.

The first—the one you as graduates have just entered—is the acquisition of the basic tools by which the clinical intelligence operates, i.e.—a body of knowledge applied after observation, examination, reason and judgment. This elementary stage is generally completed by the end of the residency or its equivalent. Its behavioral end point is the use of these tools *effectively* in a given field.

The second stage involves the sharpening and perfection of these tools through experience so that they can be used prudently and safely. This occurs for most of us between five and ten years after completion of formal professional education.

The third stage comes only after many years of critical examination of one's own clinical experiences. It is the stage of clinical wisdom—that unerring sensitivity for making the optimal decision for the patient, even when knowledge is incomplete and the experts are in contradiction. This stage is reached only by a select few; they are recognized by that most critical of all examinations, the judgment of one's peers.

It is an unfortunate fact that even as it matures, clinical competence is susceptible to subtle dissolution by two sets of forces—one natural and the other illusory.

The first set of forces are at work in all human beings—the exigencies of time, the overwhelming needs of those we serve, the exuberant proliferation of new facts, the competition of family and social interests, geographic or institutional isolation from the mainstreams of new thought and the simple loss of resiliency of the mind with passing time.

The second set is more peculiar to modern medicine. These are the forces which create an illusion of competence when its substance is actually being eroded. I refer to the uncritical acceptance of each new procedure or drug, the global expectations of society which may lure us into being amateur psychologists, sociologists, economists, anthropologists, the mystique of technology, gadgets, or complex operative procedures, the comfortable assurances of degrees, boards, college memberships and other paraphernalia of our tribal life as professionals. Team practice and institutional medicine are essential in delivery of the best care today, but it is too easy to feel competent in a group where others may be carrying your burden of responsibility. The M.D. degree itself, conferred as it is without qualifications, can invite pretense in the unwary and the proud. Omniscience and leadership of the health team, for example, are not the automatic privileges of this degree.

All of these forces conspire today to an imperceptible attenuation of clinical competence. By a series of easy rationalizations and habitual transgressions, our original professional to special capability—the one you are making today—can become a pretense. In this sad state, more energy may be devoted to the maintenance of the facade of expertise than to the cultivation of real competence.

(B) How can we detect these ubiquitous erosive tendencies and perhaps prevent or ameliorate them? I turn now to the second major component of the clinical intellect—*the clinical conscience*—that special sensitivity of the clinician to the rightness and wrongness of each of his intentions and actions and the obligations always to accept what is right over what is expedient. It is the acuteness of the clinical conscience which is the ultimate antidote to pretension.

Competence is difficult to measure directly since the mere possession of knowledge does not guarantee its proper usage. A better way, and one which we can pursue daily, is to examine our clinical consciences for the early signs and symptoms of erosion. Certain pathognomic defenses are erected by the declining conscience to protect itself from too close an inquiry. These are the seven "deadly sins" of the clinical intellect and I would like to catalogue them for you.

The *first* is obscurity of expression—an unremitting urge to use words as a screen for ignorance. Cardinal signs are a reluctance or even refusal to explain the bases for one's actions to patients or colleagues or to define the terms used. In an advanced state, the mere request for explanation is taken as an insult to person and profession.

The *second* is the unsupported assertion—this is easily spotted by frequent recourse to authoritative and dogmatic statements revealing knowledge peculiar only to the professional so afflicted. When questioned, the response is one of hurt pride reinforced by vigorous repetition of the phrase, "in my experience."

The *third* is a preference for intuitive solutions to even simple problems. Unquestionably, intuition is an ingredient of clinical wisdom. But, when it is the dominant response, it is an infallible sign of a declining intellect. Conclusion-jumping, hunches and vague feelings are not the stuff of safe medicine.

The *fourth* sin is that of therapeutic enthusiasm. Too easy resort to the prescription pad and the use of medication and gadgets instead of investigation are besetting signs of the weakened clinical conscience. Protestations about public demands for medication and lack of time do not absolve from this defect.

The *fifth* sin is the painful response to the new idea—monolith. We all stoutly resist the new thought which threatens to turn out some of the more cherished inhabitants of our minds. When the admittance rate of new ideas approaches that of an exclusive club, the intellectual death of the clinician is at hand.

The *sixth* sin is the antinomian complex—all suggestions for improvement are labeled as "irrelevant." Thus, what is difficult is called "academic" or "impractical" or what requires careful attention is called "losing the forest for the trees." The clinician so afflicted always works from a negative stance and so defends himself from even considering a change in his behavior.

The last and most serious of the sins of the clinical intellect is loss of the fear for doing harm. The watchword here is—"well it can't do any harm," or "in my hands this is a safe procedure, etc." This is the most mortal of the sins against competence and a sure sign of senescence of the clinical intellect.

You should establish now a daily habit of examining your clinical conscience against a similar set of sins as you embark on the first stages of your clinical competence. Each of us has the responsibility to diagnose the incipient signs of pretension in our own behavior. The clinical conscience, like the other tools we have learned, is kept sharp only by daily use. It is absolutely indispensable for anyone who hopes to progress through all three stages of maturation of the clinical intelligence.

(II) Thus far, I have deliberately emphasized the importance of the *individual* clinical conscience as a prophylactic against the decline of clinical competence. Yet, we must also take measures as member of *a profession* to protect the patient against those who do not examine their own behavior critically.

Such an endeavor is necessary on both moral and social grounds. The educated public today is becoming increasingly sensitive to the possibility of pretension in medical acts. The initiative for change in the health professions is moving rapidly to the public sector and away from the professional. Unless we take leadership, we shall face the imposition of legal restrictions which can ultimately compromise the quality of the care we provide.

What are some of the things I believe we can do as educators and practitioners?

First, we must remove some of the pretensions inherent in an undifferentiated degree, medical or otherwise. Students today must be trained for competence of a high degree in circumscribed areas. Family medicine, the clinical specialties, research or community medicine are examples. The student should be allowed to select these and other areas of concentration early in medical school tracks. The basic science component for each track will then be variable and determined by its importance for the chosen field.

The University will then have the responsibility, not only for conferring a professional degree in medicine, nursing, dentistry, but a degree which also states the field of qualification. This means carrying the student to the point at which he can perform safely in a specific field. The public is thus alerted to the limits of his competence. Corollary to this, is the concept of a limited license which would state the field of competence and give it legal sanction as well.

This concentration on competence in limited fields will create the demand for a new type of professional, specifically prepared to be a coordinator of the process of patient care and the trained leader of the patient and medical care teams. This will probably be the major function of the generalist in all our professions in the future. His expertise will be in group and social psychology, decision-making, communi-

cation sciences, game theory and systems analysis.

We earnestly hope that each of you will continually re-examine yourselves for signs of attenuating competence. I do not believe, however, that society will be satisfied with fortuitous methods alone. Re-certification in some form, at stated intervals, will undoubtedly be a legal requirement for continued practice. Periodic examinations are not the answer. Clinical competence is built on prudential actions, not the ability to pass examinations in schoolboy fashion.

One indispensable way to assure competence is to re-immerse oneself in a university hospital or its affiliate hospital at approximately 7-year intervals. To function in new roles is to learn these roles by experiencing them. Sabbatical fellowships for practicing physicians, dentists and nurses will be provided as the public grasps more fully the great difficulty of maintaining clinical competence.

Each university medical center must take more direct responsibility for the continuing education of *each physician* and other health professionals in its region and consider him an enrolled student for all of his professional life. The most effective way to accomplish this is to assist each community hospital to become a teaching institution and a part of the university family. What has in the past been an option for the university is now a mandate. Medical centers and community hospitals will soon be certified for certain phases of continuing education. This will improve the availability and quality of the programs now offered, and delete the haphazard efforts now so prevalent.

In addition to these educational devices, we can expect fuller institutionalization of quality control in medical care. Tissue committees, utilization and pharmacy and therapeutic committees, must be more widely and effectively used to examine the quality of institutional care. They are still too constrained by professional prerogatives in most hospitals.

Such things as critical examination of individual physicians prescribing practices, laboratory workups, efficacy of evaluation of the patient's presenting complaint, accuracy of diagnosis, efficient use of personnel and other items now in the realm of the "sacred" must be openly examined. The bureaucratic overtones of such examinations will not prevent their use. Conscientious physicians will anticipate these trends and establish effective means of peer control if they wish to avoid invasions of their present freedom in clinical practice. This may require adaptation of measures we have resisted in the past—standardization of orders, medications and procedures and even the admission of non-physicians into some of the inner mysteries of clinical practice. There is even the possibility that each physician may have a computer-stored record of his diagnostic and prescribing practices and their efficacy against which he can check himself and perhaps detect the need for intellectual refurbishing before it is thrust upon him.

Those who pay for medical care demand quality care. State and federal governments and an educated public are already asking us to institute some of the measures I have outlined in order to assure competent medical care for all. Medicine is—after all—an instrument of social purpose and we must not resent this intrusion. Indeed, it is the health professional who should lead the way to a truly effective assessment of individual and corporate competence which will be a model of social responsibility.

It is now time to recapitulate my major thesis. I have chosen to speak to this graduating class of health professionals on the day of their "profession" on the subjects of clinical competence and conscience. I do so because these are the faculties you must nurture every day of your professional lives. As your own clinical competence matures be aware of the forces tending to erode it; recognize the importance of developing a sensitive clinical conscience as the ultimate safeguard of the patient; recognize the early signs of dissolution of competence in yourself; accept the responsibility for continuing your education and for participation in the institutional and legal assessments of your own competence and that of your colleagues.

These are some of the deeper dimensions of the word profession today. Without understanding them, we run the serious risk of self-delusion, pretension and even of hypocrisy. Worst of all, we will fail in the first requirement of our existence as health professionals—to help the patient.

The clinical intelligence and its two components, competence and conscience, both deserve careful cultivation. Only when they are healthy, you can anticipate in medicine a life which combines satisfaction, service and authenticity.

Mammography: Highly Accurate But Too Little Used

Wilma C. Diner, M.D.*

History

In 1913, a German named Saloman took the first radiographs of breast specimens. He was the first to write about the x-ray findings of malignant and benign breast lesions. He also showed the first "occult" breast carcinoma and describe the typical calcifications in malignant tumors. Since then a number of radiologists have been interested in the technique of radiographic examination of the breast.[18] It was not, however, until 1960, when Egan reported his first series of cases from M. D. Anderson Hospital[9] that active interest developed and the use of the procedure became widespread throughout this country and in many parts of the world. The explanation for this burgeoning interest appears to be two-fold: Dr. Egan developed a simple exposure technique that resulted in films of excellent quality. As a result of this he obtained a high degree of accuracy in distinguishing benign from malignant lesions, and discovered a significant number of unsuspected carcinomas. Extensive international literature has now developed in this field, and the procedure is well accepted in most academic centers. The only remaining problems being worked out are minor points of technique[15,20,32,34] and research into the utility of routine screening for unsuspected malignancies in asymptomatic women.[21,22,33,41,42]

Technique

Dr. Egan uses three projections of the breast:[9,14,15,16] a cranio-caudad and a lateral view of the breast itself, and an antero-posterior view of the axilla and tail of the breast (Fig. 1). In selected cases, for better visualization of a suspected lesion, supplementary cone down or spot films of a limited area of the breast may be obtained. The essentials of good mammographic technique are low kilovoltage and high detail fine grain film. The 26 to 30 kilovoltage range, producing high contrast between fat and other soft tissues, can be obtained with any standard diagnostic unit capable of 300 milliampere setting, by virture of a minor stabilization adjustment which can be performed by any competent x-ray service man. Fine grain commercial type M film is used. The exposure time is long, 3 to 6 seconds, requiring a cooperative patient. The sharp detail and high contrast thus obtained offset, in Egan's opinion, any problems of motion. With the use of the Egan technique the amount of radiation exposure to the breast is not excessive, being less than in certain other standard radiologic diagnostic procedures.

In 1962, the Cancer Control Division of the United States Public Health Department in conjunction with the American College of Radiology sponsored a Reproductibility Study. Radiologists in various institutions were asked to perform mammography in an attempt to determine whether Dr. Egan's accuracy could be equaled. The results were so encouraging[8] that the organizations now sponsor ten training programs throughout the country; radiologists and their technicians may attend for three to five day courses in the technique of mammography and its interpretation.

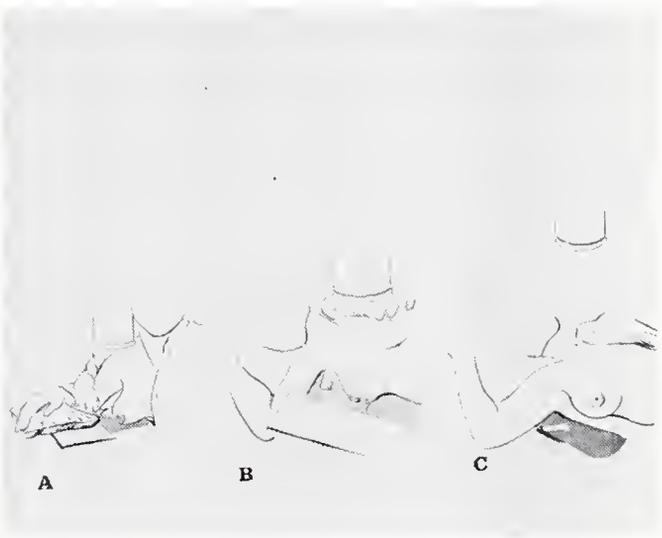


Figure 1

A. Cranio-caudad projection of breast. Film must be placed snugly against chest wall, with breast extended and flattened onto film and the nipple positioned in profile.

B. Lateral projection of breast. The opposite hand holds other breast out of field. The nipple must be in profile.

C. Antero-posterior view of axilla. A higher kilovoltage is used (54 kV).

Findings on Mammography

1) Normal Breast (Fig. 2). The appearance of the breast varies with age and hormonal status. The virginal and young breasts are much more dense and glandular, while the older pre-menopausal, menopausal and especially post-meno-

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pausal age groups show fatty atrophic breasts with little or no glandular tissue and only a few fibrous supporting strands.[6,39] Since fat is radiolucent, neoplasms or other masses are much more clearly seen in the older atrophic breast. Therefore, the diagnostic accuracy in detection

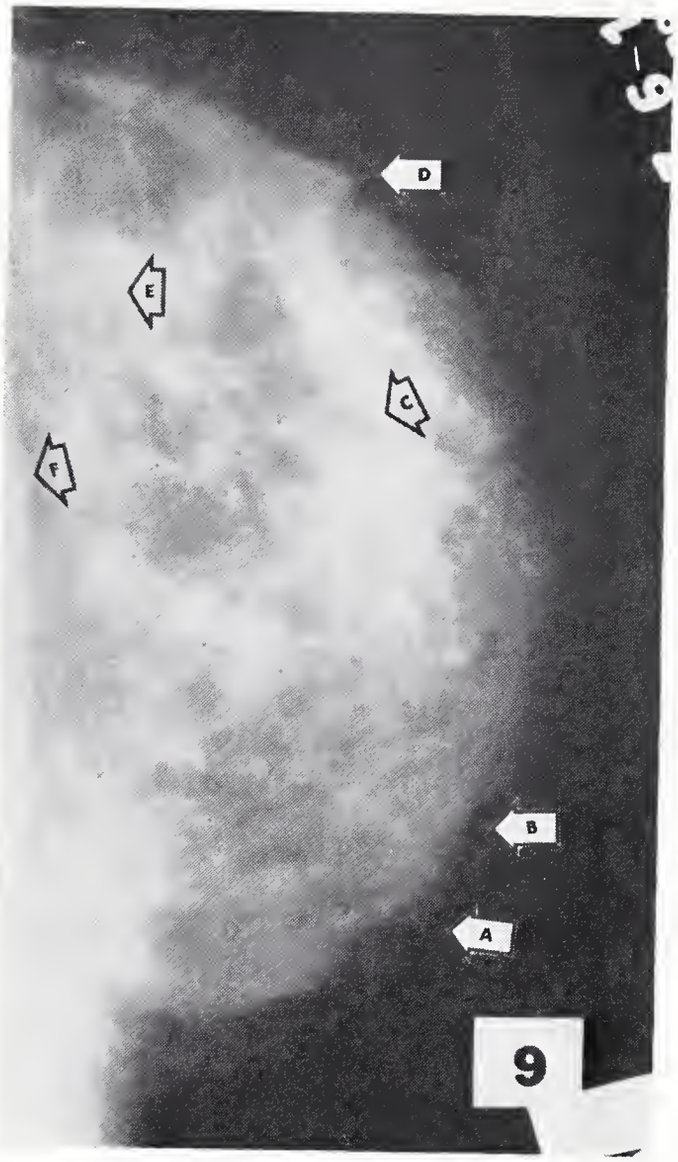


Figure 2
Normal mammogram of a woman of child bearing age.
A. Skin
B. Subcutaneous fat
C. Vein
D. Cooper's ligament
E. Glandular tissue
F. Inframammary fat

of a lesion or defining its type is much higher in the older age group. The correlation between atrophy with fatty replacement and age is not an absolute one, because an occasional young patient shows considerable atrophy. Hormones, such as oral contraceptives, are said to change the mammographic picture; however, one study indicates that one cannot differentiate those patients who are on hormone therapy from those who are not.[5]

2) Fibrocystic disease (Fig. 3). Breasts involved with extensive fibrocystic disease are usually very dense and it may be difficult to detect a dominant nodule in such a breast. The cysts and dense fibrous tissue produce a characteristic pattern.

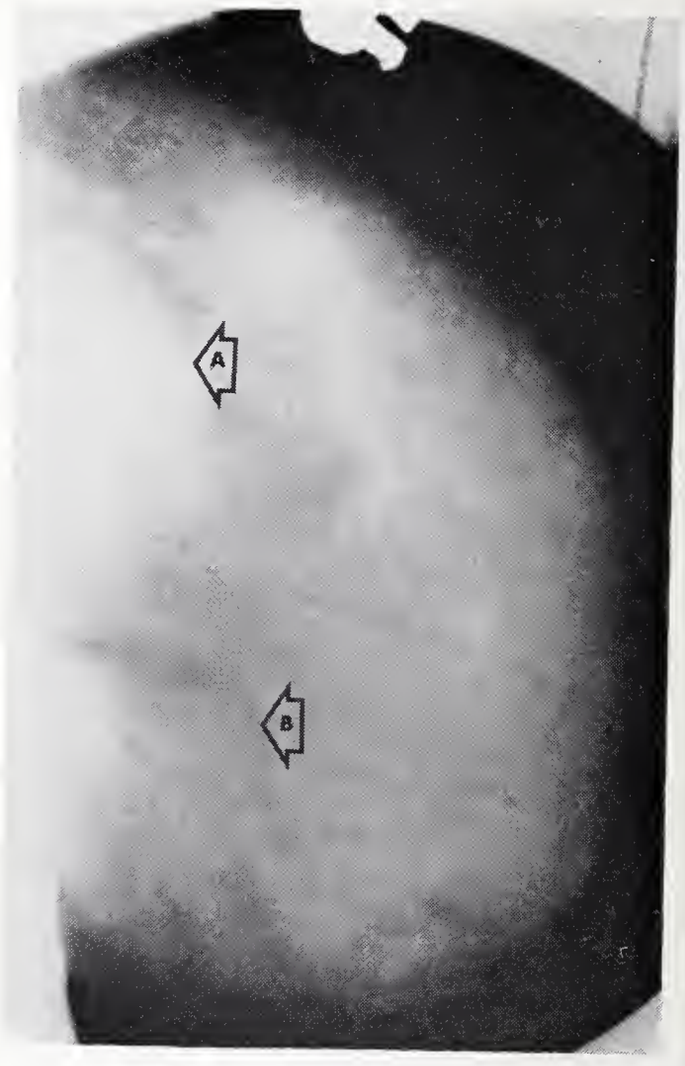


Figure 3
Fibrocystic disease. A dense linear fibrotic pattern is interspersed with varying-sized, smoothly-rounded homogeneous masses (cysts) (A) and some fat (radiolucent) (B).

3) Masses. Once a dominant mass is identified on the radiograph, certain characteristics differentiate benign from malignant lesions (Fig. 4, Table 1). Benign lesions tend to show a rounded or ovoid shape, smooth borders, uniform density, and no invasion of surrounding tissues, but rather smooth displacement of surrounding breast structure. A halo of fat around the mass is quite characteristic (Figs. 5, 6). By contrast, malignant masses are of greater and more irregular density, irregular shape, and display tentacled or spiculated margins with invasion of surrounding tissues (Fig. 7). Either may contain calcifications, those of malignancies usually being more numerous, clustered, and of bizarre shape and irregular margination, and



Figure 4

Artist's rendition showing usually recognizable differences between benign and malignant masses.

A. Benign—Smoothly outlined, homogeneous density, surrounded by fat halo, no secondary signs.

B. Malignant—Irregular outline, infiltration of surrounding stroma, more dense than benign lesion, containing clusters of sand-like calcification; enlarged veins, and overlying skin thickening.

showing varying degrees of density (Figs. 8, 9). Secondary signs which may suggest malignancy include nipple and areolar changes, increased vascularity, skin thickening, and increase in fibrous stroma of the breast.

Accuracy

Many different workers have found that the accuracy rate of the average radiologist interested in the procedure, viewing technically good films, with moderate experience in the method, is approximately 80 to 85% for malignant lesions and about 90% for benign lesions.[4, 10, 17, 26, 29, 31, 35, 44, 45] The radiologist will interpret a benign lesion as suspicious or malignant more often than he will pass a malignant lesion as benign. On the other hand, among all films views, there will be two to

CHARACTERISTICS OF BREAST MASSES

	BENIGN	MALIGNANT
SHAPE	Round, oval, lobulated.	Tentacled, ragged, spiculoted, variable.
BORDERS	Well-circumscribed, regular, smooth; thin layer of surrounding fat.	Paarly circumscribed, irregular, fuzzy.
DENSITY	Same as skin and fibrous strama. Hamageneaus.	Mare dense than benign lesions. Nanhamogeneaus.
RELATIVE SIZE	Same size ar larger thon clinical measurement.	Smaller thon clinical measurement, by factor af 2 - 4.
SURROUNDING TISSUES	Not invaded; displaced trabeculae pushed aside smoathly.	Infiltrated; trobeculoe retracted irregularly and thickened.
SECONDARY SIGNS	Usually none present.	Skin retraction ar thickening. Nipple retraction; areolar thickening. Large veins. Increased strama an one side. Obliteration of retramammary space. Axillary nade, larger than 1 cm.
CALCIFICATIONS	Scattered but with polarity. Few. Usually intraductal. Unifarmly dense, smooth barders; raunded ar linear.	Canfined ta but scattered through moss; na polarity; uncauntable, varying density; unsharp borders, bizarre shape.

Table 1

Characteristics of benign and malignant breast lesions.

five percent which will show otherwise unsuspected carcinomas.[2, 3, 11, 27, 30, 44] Lesions which can be recognized by mammography, and not suspected clinically, include those in which there is no dominant mass, but typical malignant type of calcification is seen;[19, 25] very deep-seated, small, non-palpable carcinomas; small carcinomas adjacent to a known cystic lesion; and intracystic carcinoma which may show irregular margins of invasion. In contrast, some lesions which may create confusion include: abscess, which resembles carcinoma but which is usually obvious clinically; tuberculosis, resembling diffuse carcinoma; fat necrosis, resembling carcinoma; fibrocystic disease or the young dense breast obscuring a carcinoma; a fibroadenoma which has an irregular margin but proves to be benign; and secretory disease with intraductal hyperplasia and hidden microscopic areas of invasive carcinoma.[45] These examples indicate why the failure to recognize evidence of malignancy by mammography when a clinically suspicious lesion is present should never be a reason for a false sense of security and postponement or omission of biopsy. Conversely, a suspicious lesion by mammography in a breast thought to



Figure 5
Typical benign lesion (cyst) very similar to benign lesion in artist's drawing (Figure 4).



Figure 6
Typical benign lesion (fibroadenoma). Note lobulated outline, but no tentacles or infiltration. Fat halo is not conspicuous.

be normal clinically is an absolute indication for biopsy.[23, 24, 29, 36, 40, 44, 45]

Teamwork Essential

In the case of a lesion suspected by mammography without a dominant mass, it is essential that the surgeon, radiologist, and pathologist work closely together. The radiologist should map out the exact location of the lesion for the surgeon, as palpation is difficult even after making an incision into the breast. If small calcifications are seen on the mammogram, a wedge biopsy of the appropriate area is done and immediately radiographs are taken of the operative specimen. The radiologist can determine whether or not the suspected area has been removed,[43] and he can demonstrate the area to the pathologist, so that microscopic sections can be taken in the proper place.[30] If the lesion is not present on the specimen radiograph, the surgeon must return for a more extensive biopsy. Sometimes as many as three attempts are necessary to find the questionable lesion. A particu-



Figure 7

Typical carcinoma.



Figure 8

Malignant type calcifications. Bizarre form and arrangement, varying density, clustered within tumor mass.

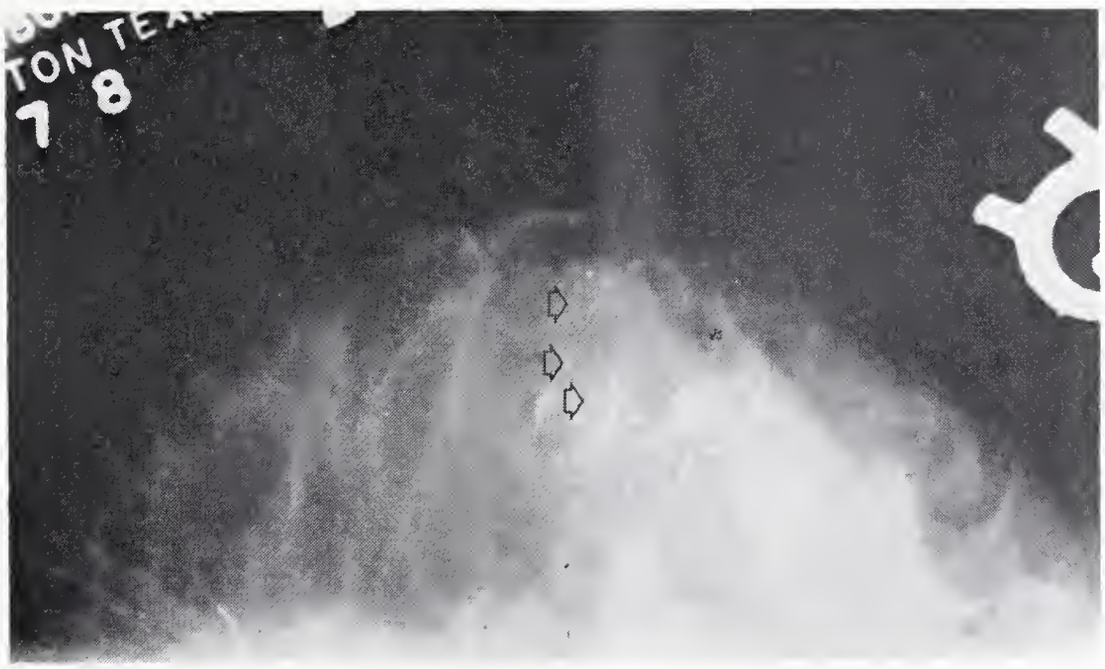


Figure 9

Malignant type calcifications. The mass is not clearly outlined.

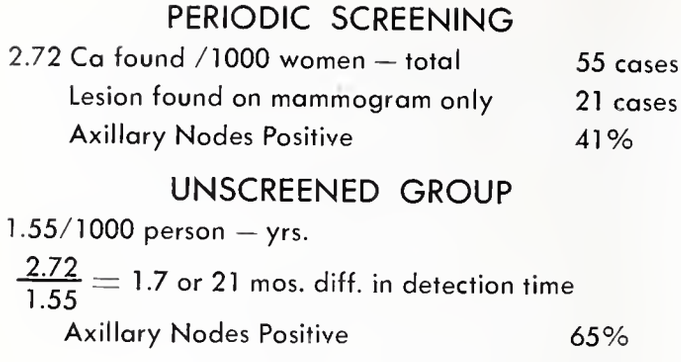


Figure 10

Periodic Screening (Strax). See reference No. 41. These are results of a group of women participating in New York State Health Insurance plan. Randomly separated, half of them (unscreened) obtained their usual medical care. The other half (screened) were examined carefully by physical examination and mammography initially and at 1 year. The higher detection rate and earlier discovery of cancers is obvious. This study continues.

larly difficult problem is lobular carcinoma and carcinoma-in-situ, which is frequently multifocal and bilateral.[7,37] Mammographic findings are suspicious, clinical examination often normal, and operative specimen radiographs are of great value in locating the lesion and determining its extent.

Mammography has stimulated further interest in the basic aspects of breast cancer. It has emphasized the high incidence of unilateral but multifocal breast cancer, bilateral carcinoma, and the diffuse stromal reaction in the remainder of the breast often found with carcinoma.[35] Routine mammography followed by radiographic and histologic studies of large breast sections have confirmed that approximately 3% of women presenting with a carcinoma of one breast can be shown to have an occult lesion in the opposite breast at the time of the original diagnosis. About 7% of all women with carcinoma of one breast will eventually develop a carcinoma of the opposite breast. Skin thickening has long been recognized on physical examination in advanced malignancy, and sometimes malignant invasion of skin lymphatics confirmed histologically. The skin thickening seen on mammograms so commonly with carcinoma, and sometimes remote from the lesion, is a much more common phenomenon, and is due to hyperplasia of collagen tissue in the dermis rather than malignant invasion.[28,35]

SUMMARY OF INDICATIONS
Breast mass
Breast symptoms
Fibrocystic disease
Post-mastectomy for carcinoma
Positive family history
Large fatty breasts
Search for primary
Cancerphobia
Screening normal women

Table 2

Summary of Indications for Mammography

Screening Procedure

Unsuspected carcinoma is demonstrated by mammography in a significant number of cases, revealing smaller tumors and a significantly lower percentage of positive axillary nodes. This raises the question of the value of screening all normal women by means of radiographic examination. The necessary time, equipment, money, and manpower to accomplish this appears to make it unfeasible at present. Experimental studies are being carried out in order to determine whether earlier detection of breast cancer truly results in increased longevity for the patients[41] (Fig. 10).

Indications

Mammography can differentiate between benign and malignant lesions, detect unsuspected tumors, and help the surgeon and the pathologist locate non-palpable lesions. It adds to the basic understanding of breast disease in general, particularly when the surgeon, pathologist, and radiologist cooperate as an effective team. Indications for the procedure are met in everyday medical practice (Table 2). These include any patient with a breast mass or breast symptoms; patients with fibrocystic disease in whom carcinomas are more frequent and palpation is more difficult to evaluate; any patient who has had a mastectomy for carcinoma (or who is about to have one, for evaluation of the rest of that breast and the opposite one); women with a positive family history; those with large fatty breasts, difficult to palpate; and those in whom one is searching for a primary lesion. Interval examinations in high risk groups should be at six months to yearly intervals. The procedure may reassure a patient with cancerphobia, in whom there are no clinical findings, that she does not need an operation. Screening of normal women past the age of forty will become more prevalent as more radiologists become competent in the technique. Newer methods for screening more rapidly will aid this problem.[42]

Summary

Mammography, roentgen examination of the

breast by means of a simple plain film technique, has been established as an accurate and valuable diagnostic procedure in the evaluation of any patient with breast disease. It demonstrates clinically occult tumors in a significant number of patients. Until mass screening procedures become feasible, all unmarried women above 40 years of age and those in other high risk groups, such as those with a family history of previous mastectomy, or with fibrocystic disease, should be examined at regular intervals by this procedure in conjunction with careful physical examination. The procedure should always be considered as an adjunct to physical examination, and a negative mammogram should never give a false sense of reassurance. In other words, if the doctor believes a biopsy is needed, it should never be neglected or postponed because of a negative mammographic examination.

A minor modification of equipment and a short training period for the radiologist and his technician are almost essential for any radiologist undertaking this technique.

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Plasma Insulin Responses to an Oral Carbohydrate Solution

S. M. Genuth (1800 E 105th St, Cleveland)
Diabetes 18:434-436 (June) 1969

Plasma insulin responses to a new oral carbohydrate solution (Glucola) were determined in 21 normal subjects. Mean insulin values at fasting, 30 minutes, 60 minutes, and 120 minutes after the carbohydrate load were 13 micro-units/ml, 109 micro-units/ml, 90 micro-units/ml and 62 micro-units/ml, respectively. Twelve subjects retested with 100 gm of oral glucose had comparable insulin responses. In 19 patients with moderate diabetes, blood glucose and plasma insulin responses to the carbohydrate solution and to 100 gm of glucose were indistinguishable. This form of carbohydrate loading seems to be an effective and reliable challenge to the pancreas.

Operative Mortality and Five-Year Survival Rates in Men With Bronchogenic Carcinoma

W. Weiss (1223 E Durham St, Philadelphia), D. A. Cooper, and K. R. Boucot
Ann Intern Med 71:59-65 (July) 1969

Histologically proved cases of bronchogenic carcinoma were reported from 12 Philadelphia hospitals from 1956 to 1965. Of the first 421 men who were operated upon and had five-year follow-up, 156 had thoracotomy only, and 265 had resections. Age, tissue type, and surgical procedure were examined in relation to operative risk and five-year survival. Explored patients whose cancers were not resected were included; such patients have a significant operative mortality rate, but no benefit. Overall operative mortality rate was 11%, and five-year survival rate was 13%.

DEPARTMENT OF

PEDIATRICS

UNIVERSITY OF ARKANSAS
SCHOOL OF MEDICINE

Grand Rounds

Sarcoidosis

Discussors — Edwin R. Hughes, M.D.* and Wilma C. Diner, M.D.**

Participant — Robert Arrington, M.D.***

Editorial Director — Jerry G. Jones, M. D.****

Dr. Arrington: A 13-year-old Negro male was referred to the University of Arkansas Medical Center because of chronic effusion of the left knee. At 8 years of age the patient had dislocated his left patella. He had no further difficulties with his knees until July, 1968, when he again dislocated the left patella. Since that time he has dislocated each patella six times. Since September, 1968, he has had recurrent effusions of the left knee. His general health was otherwise considered to be excellent.

Physical examination on admission (June 5, 1969) revealed a well-developed, well-nourished male who was alert and cooperative. An alternating exotropia was present. The chest was clear and there was no visceromegaly on abdominal examination. The patellae were laterally dislocated at 90° flexion. There was tenderness medially and laterally to the patellae. An effusion was present bilaterally. Range of motion was decreased.

Pertinent laboratory data included a hemoglobin of 13.4 gm%, hematocrit 41.5%, ESR 45 mm/hr, and WBC 5,600. Serum calcium was 10.4 mgm%. Total serum protein was 9.0 gm%, with albumin 4.0 gm%. Urinalysis was within normal limits.

The patient was admitted for evaluation and treatment of chronic effusion of the knees and recurrent patellar dislocation. Bilateral patellectomies and reconstruction of the knee joints were accomplished. The microscopic diagnosis was osteochondritis dissecans. A routine chest film showed findings consistent with Beock's Sarcoid. This impression was confirmed by lymph node biopsy. Ophthalmological consultation was obtained, and no evidence of ocular involvement was found. No treatment for the sarcoidosis has been instituted.

Dr. Hughes: This patient represents an asymptomatic case of sarcoidosis. His osteochondritis dissecans is an additional diagnosis which I am unable to relate to the sarcoidosis. The patient is asymptomatic and the diagnosis of sarcoidosis would not have been made had a routine chest X-ray not been made. Dr. Wilma Diner will present the radiographic findings.

Dr. Diner: The chest X-rays (Fig. 1) of this patient demonstrate the typical pulmonary lesions of sarcoidosis. Large hilar lymph nodes are present bilaterally, as well as a large right paratracheal node. Diffusely throughout both lung fields are fine nodular interstitial infiltrates. Given the history of an asymptomatic patient, we could consider X-ray findings such as these almost to be proof of sarcoidosis. However, if we did not know the patient was asymp-

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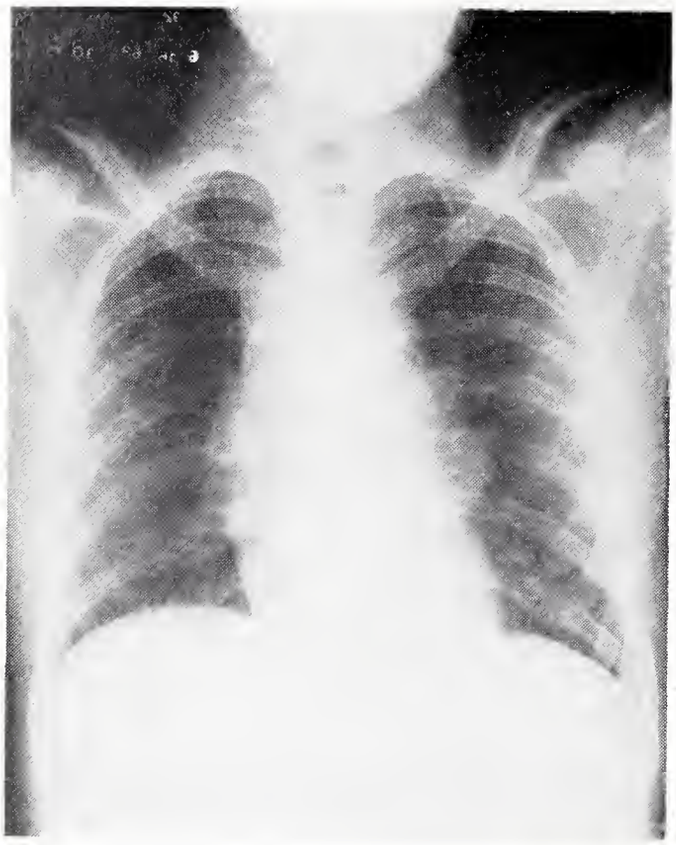


Figure 1

Chest roentgenograms of patient



tomatic, other disorders would have to be considered such as histoplasmosis, tuberculosis, or lymphoma.

DR. HUGHES: The most important thing to consider in this case is the means of diagnosis of an asymptomatic patient with sarcoidosis. If you do not believe that a compatible X-ray appearance in an asymptomatic patient is sufficient proof, the diagnosis has to be by tissue examination. If one can find palpable lymph nodes in the cervical area, he has about an 80% chance of being able to make the diagnosis of sarcoidosis in an affected patient. A lung biopsy can be done, but we do not do this very often in pediatrics. A good method of making a diagnosis is by biopsy of the scalene fat pad, the yield of positives in affected patients being about 80%. Probably one-half of patients with pulmonary sarcoidosis also have involvement of the liver and spleen. Thus the liver is another good site for biopsy, and this may be the best site for easily obtaining a histologic diagnosis.

Another means of making the diagnosis is the Kviem test, in which 10% saline suspension of spleen from a patient with sarcoidosis is injected intradermally. The site of injection is biopsied 4 to 6 weeks after administration of the antigen, to determine if a typical sarcoid granuloma has been produced. Even if a nodule is not present in the site of injection, a granuloma may be demonstrable on microscopic examination of the injection site. Approximately 80% of patients with sarcoidosis will have a positive test. False positives occur in about 2% of these patients. In a world-wide cooperative study, Kviem antigen made from a single spleen was sent to medical centers all over the world, and it was found that approximately 50% of patients with histologically proven sarcoidosis had a positive Kviem test. As is usually the case with cooperative studies, these results are lower than optimal. This may be due to faulty technique in administration of the antigen, or it may be related to the duration of the patients' disease. Patients with long-standing sarcoidosis are less likely to have a positive Kviem test than are those with a more recent onset.

To avoid having this disorder, it is best to be either Chinese, Eskimo, or Indian. Sarcoidosis was not reported in American Indians until 1964. It has never been reported in Eskimos and it is extremely uncommon in Chinese. The incidence is highest in Norway and Sweden, with a rate of 60 per 100,000 population.

The epidemiology is very interesting. One of the theories that has been popular was that this is an autoimmune disease triggered by pollen

from pine trees. This theory was based on the finding that sarcoidosis was more common in rural areas than in the urban population. Apparently that was true in isolated areas, but on a world-wide basis the disease seems to be as common in urban areas as in rural ones.

Uveoparotid fever is an uncommon, rapidly progressive involvement of the eye and parotid gland, with associated fever and facial nerve paralysis. Granulomatous lesions are present in the uveal tract of the eye and in the parotid gland. It is important to do a slit lamp examination on patients with sarcoidosis to make this diagnosis, because it is essential that children with uveitis be treated.

In Sweden, patients with sarcoidosis frequently present in a manner different than we see in this country. They may have findings similar to those of a collagen disease, with arthritis and erythema nodosum. The latter finding is more frequently encountered in adults. Although the signs and symptoms of sarcoidosis overlap with the collagen diseases, the differential diagnosis is not difficult.

The pathogenesis of the sarcoid lesion has been studied extensively. Many foreign substances stimulate a similar reaction—metals (beryllium), talc, fungi, parasites, and even Mycobacteria. The initial reaction is one of migration of lymphocytes and histiocytes to the area. Histiocytes coalesce to form large giant cells which may be Langerhan's in type but more often resemble foreign body giant cells. Numerous non-specific inclusion bodies have been seen in the giant cells of sarcoid-asteroid bodies and Schaumann's bodies.

One important point is that although there may be necrosis in the center of the granuloma of sarcoidosis, there will never be caseous necrosis as is seen in tuberculosis. Radiographically, cavitation rarely occurs in the lung in sarcoid, which is indistinguishable from tuberculosis.

Destruction of 80% of the lung parenchyma is required before one gets compromise of the respiratory function. When we treat these children with steroids, I was never able to understand why the X-ray would improve and the children would generally be clinically much better, but the pulmonary function studies would remain unchanged.

Which patients should be treated with steroids? Children with uveitis should receive them. However, they may be administered topically rather than systematically. If only the anterior chamber is involved, often topical steroids will control the disease. One out of five patients with sarcoidosis has hypercalcemia, and these individuals should also be treated with steroids. The hypercalcemia is related to a hyper-reactivity to Vitamin D. If the hypercalcemia persists, these patients will get renal disease. Thus, one always treats the patient with hypercalcemia. The patient with marked pulmonary function impairment also deserves therapy. These patients are treated with full therapeutic dosages for about a month generally, and then steroids are tapered to a low maintenance dosage which is continued for about a year.

People who die from sarcoidosis often die in renal failure. There are two types of renal involvement with sarcoidosis. One disorder is of the basement membrane and leads to diminished glomerular filtration. This basement membrane disease is not as common or as important as the disease associated with sarcoid granulomas in the kidneys. The prognosis of the patient with granulomatus lesions of the kidneys is poor.

In the natural history of sarcoidosis, symptoms and signs are minimal during childhood. Around age 20 there is a marked increase in findings referable to the disorder. The clinical disease usually lasts for approximately 2 years before subsiding. In a certain percentage of patients, however, the disease does not subside but progresses to pulmonary failure, renal failure, and even myocardial failure. Approximately 10% of patients have this severely progressive form of life-long disease.

Question: Is it possible for patients with sarcoidosis to never have clinical disease?

Dr. Hughes: Certainly many patients with sarcoidosis do not have pulmonary involvement or enlarged lymph nodes or other clinical evidence of the disease. However, granulomatous lesions of the heart, pleura, spleen, kidney, or other organs will be found on post-mortem examination. Based on mass population screening by chest X-rays in Denmark, only one patient in four with pulmonary sarcoidosis is symptomatic.



SURGERY at the UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE*

*Under the direction of Gilbert Campbell, M.D., Professor of Surgery.

Tracheal Stenosis Following Chest Trauma and Tracheostomy

Michael Rudko, M.D.*

Injury to the chest from automobile accident is becoming more frequent.

Often the patient is comatose, and to ventilate him adequately requires respiratory assistance. Commonly this means a cuffed tracheostomy tube and a positive pressure respirator.

Complications of tracheostomy, in itself a minor procedure, can lead to serious disability. One of these complications is tracheal stenosis.

A case recently seen at the Little Rock Veterans Administration Hospital illustrates this sequence.

A fifty-three year old man was involved in a single car accident on September 3, 1968. He sustained cerebral contusion, comminuted fracture of the right scapula, broken clavicle and fractures of the first through the seventh ribs on the left, with associated hemopneumothorax. The initial treatment given at a local hospital consisted of emergency tracheostomy, and assisted respiration, closed-chest tube thoracostomy, intravenous fluids and antibiotics.

Three weeks later he was transferred to the Fayetteville VA Hospital for continued care and reduction of a displaced fracture of the left clavicle.

The patient noticed at this time, though the tracheostomy tube was still in place, that breathing was difficult.

During the fourth week after his accident the left clavicular fracture was reduced and fixed under general anesthesia. He was discharged one week later, 35 days following his auto accident.

Four weeks later he returned to the Fayetteville VA Hospital complaining of increasing difficulty in ventilating his lungs, having a "sensation of something in the windpipe."

Tracheography at this time demonstrated a severe stricture of the lower one-third of the trachea. The lumen measured 7 mm. in its narrowest diameter, and the segment appeared to be 3 cm. long (Fig. 1).

The patient was then transferred to the Little Rock VA Hospital for further treatment.

The remarkable finding on physical examination was the obvious respiratory effort evoking a loud stridor heard without a stethoscope during inspiration and expiration, and localized best over the sternum at the angle of Louis.

Laboratory data were within normal limits. Skin tests were applied; histoplasmin was positive, and PPD, coccidio and blastomycosis were negative. Three sputum specimens were negative for malignant cells. Pulmonary functions demonstrated a total vital capacity of 2.73L, and a one second forced expiratory volume of 1.02L (37%)—the predicted normal VC for this patient was 4.68L. Maximum mid-expiratory flow rate was 0.67L per second—predicted normal being 3.60L/sec. Arterial gases showed the following values: PaO_2 71 mm Hg, $PaCO_2$ 41 mm Hg,

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Figure 1

Pre-operative tracheogram demonstrates stricture of the lower third of the trachea.

CO_2 25.7 mEq/L, pH 7.392.

Bronchoscopy demonstrated a narrow obstruction about 10 cm. below the vocal cords. The tissue resembled two large tonsils meeting in the center of the tracheal lumen. It was covered by friable mucosa which bled easily. No biopsy was obtained because it was feared that bleeding and/or edema might compromise the narrow lumen further and endanger the patient's life.

Two days later the patient underwent a right posterolateral thoracostomy with excision of the major portion of the fourth rib. On inspection there was no evidence of stricture from the external appearance of the trachea, which was dissected free of surrounding tissue in its entire length. The main stem bronchi were likewise freed up to allow mobilization for the contemplated end-to-end anastomosis after resection.

The endotracheal tube could not be passed through the narrowed segment. Between stay sutures the stenotic segment was incised longitudinally, the endotracheal tube was then passed down to the lower-most part of the trachea and with a cord tape and a snoose around the distal trachea the airway to the lungs was re-established (Fig. 2).

The stenotic segment was then excised (Fig. 3). It extended from a point 2 cm. above the carina for a distance of 3.5 cm. cephalad.



Figure 2

The stenotic segment has been excised. The endotracheal tube gaps the defect. Sutures have been placed circumferentially and are ready to be tied.

Interrupted sutures of 4.0 Tevdek were then placed circumferentially and tied. The endotracheal tube was pulled above the suture line and the anastomosis was tested under water for air leaks. It was air tight (Fig. 4). A drainage chest tube was then inserted and the incision closed in a routine manner. A tracheostomy was made electively to prevent the development of increased intratracheal pressure during coughing in the immediate post-op period. Penicillin and Streptomycin were used in combination postoperatively for five days. The chest and tracheostomy tubes were removed on the fourth and sixth day post surgery respectively. His subsequent course was totally uneventful. A tracheogram done four weeks after surgery demonstrated

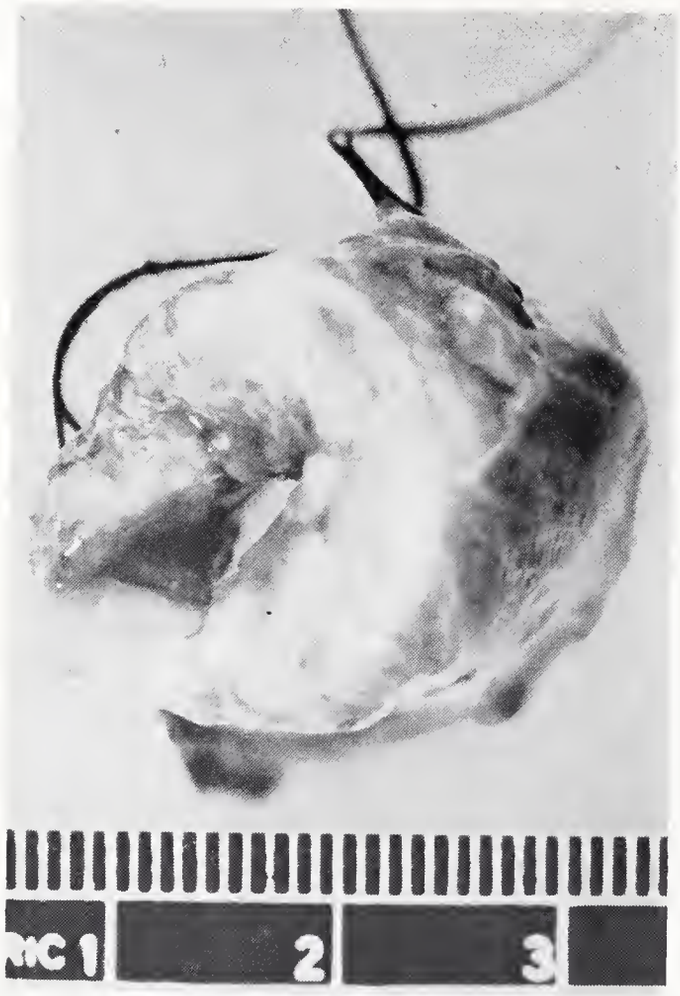


Figure 3

The excised stricture measured 3.5 cm. in length; minimal diameter at its narrowest point was 7 mm. Note the thick fibrous character of this segment.

a good airway (Fig. 5). Bronchoscopy was also done at this time. The scope was passed into both main stem bronchi without difficulty. The patient has remained asymptomatic. On his last outpatient visit in April 1969 an air tracheogram showed a patent airway.

The etiology of this man's stricture has not been conclusively determined. One possibility is that our patient may have sustained a partial disruption of the trachea and that healing with excessive granulation tissue, produced the observed circumferential stenosis. Conversely, the stricture may have resulted from the use of the tracheostomy tube. This complication of tracheostomy tubes, particularly those with an occlusive balloon, is being reported frequently.[1,3] However, when the stricture is associated with the use of a tracheostomy tube, it occurs almost invariably at the stoma. It is conceivable that a low tracheostomy and the use of a long, curved tube, whether of metal, latex or plastic may produce trauma at the point where the tip of the tube impinges on the trachea, resulting in stenosis.

The incidence of tracheal stricture following tracheostomy is really not known, for unless the degree of stenosis is severe enough to cause symptoms, it may go unnoticed by patient and physician.

If this complication is suspected an air tracheogram will promptly demonstrate the caliber of the tracheal lumen. Bronchoscopy is advised, with biopsy if possible, to rule out the presence of a neoplasm causing the obstruction.

Once the benignity of the lesion is established, the less severe strictures may be treated with periodic dilatations. When the stricture is severe, the preferred method of treatment is excision of



Figure 4

End-to-end anastomosis is completed. The suture line is air tight.



Figure 5
Postoperative tracheogram demonstrates wide open airway.

the narrowed segment and end-to-end anastomosis.

Grillo[2] states that by his technique as much as 6 cm. of trachea can be resected and continuity re-established by end-to-end anastomosis.

Prostheses have been used extensively in experimental work, but they proved poor substitute for the patient's own tissues. Plastic procedures have also been used to reconstruct the trachea. The complexity of these operations varies considerably, as do the results.

Summary

A case of tracheal stenosis following chest trauma and the use of a cuffed tracheostomy tube is presented. The surgical management is described.

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Cold-Insoluble Complexes and Complement Levels in Systemic Lupus Erythematosus

P. Stastny and M. Ziff (5323 Harry Hines Blvd, Dallas)

New Eng J Med 280:1376-1380 (June 19) 1969

Circulating cold-insoluble complexes were observed in 31 patients with systemic lupus erythematosus (SLE). When analyzed, these complexes consisted mainly of IgG and the C'1q component of complement and did not contain DNA or selective amounts of antinuclear antibody. In ten of 11 (91%) of these patients, the presence of complexes was associated with decrease in the serum level of C'3 (β_{1c}-β_{1a}) as measured by a radial diffusion method. In 25 patients without cold-insoluble complexes in the serum, the level of C'3 was reduced in only three (12%). Evidence that the decrease in the levels of C'3 was related to the presence of cold-insoluble complexes was provided by the observation that interaction of the IgG and C'1q constituents of a cryoprotein isolated from the serum of a patient with SLE produced a 79% reduction in hemolytic activity of human complement in vitro.



WHAT IS YOUR DIAGNOSIS?

Prepared by the
Department of Radiology, University of Arkansas
School of Medicine, Little Rock

See Answer on Page 197

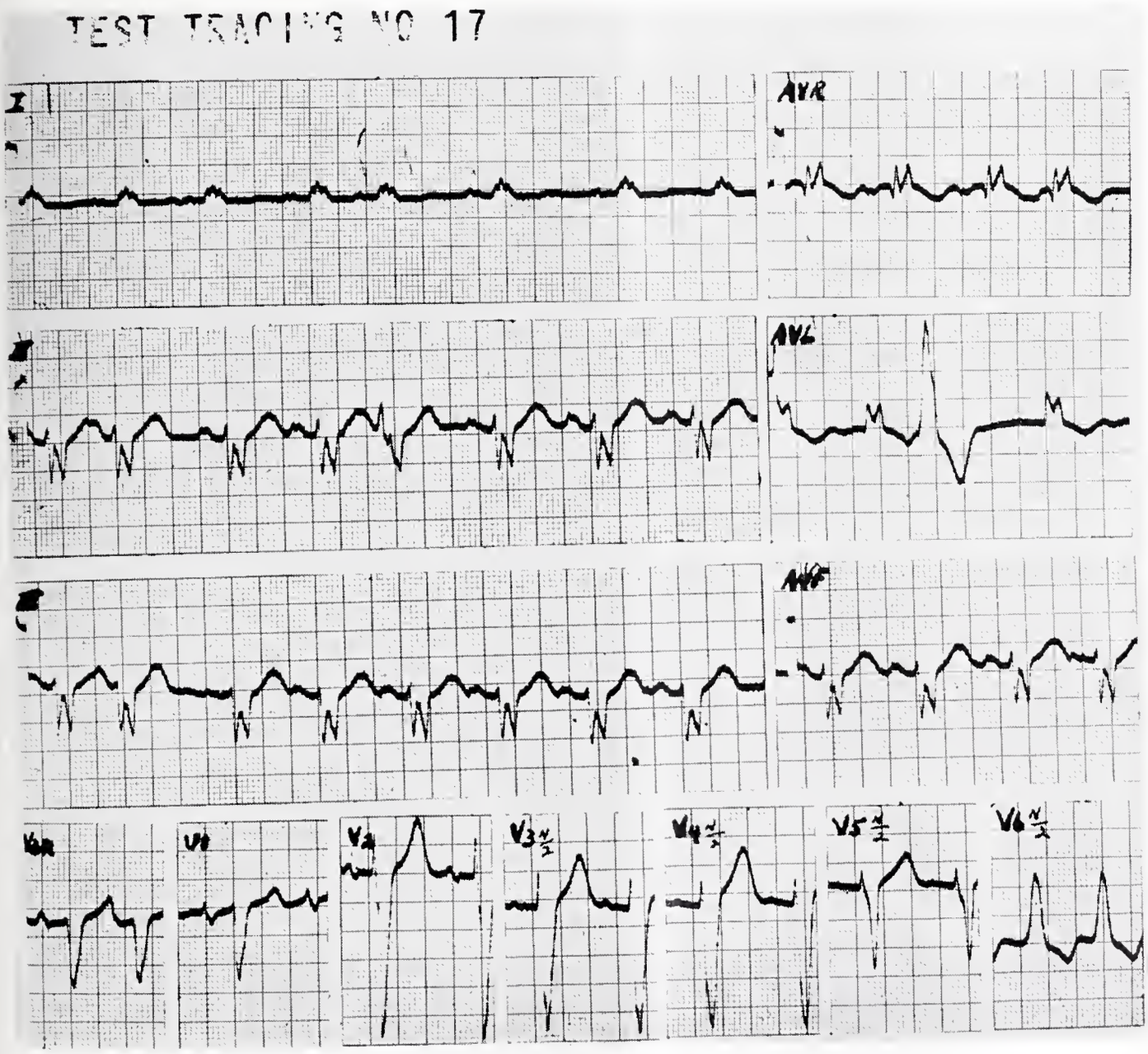


HISTORY: 10-year-old boy with weight loss, joint pain, petechiae and enlargement of the liver and spleen.

ELECTROCARDIOGRAM OF THE MONTH

AGE: 70 SEX: Male BUILD: Slender BLOOD PRESSURE: 118/80
CARDIAC DIAGNOSIS: Luetic heart disease, congestive failure.
OTHER DIAGNOSES: None.
MEDICATION: Digitoxin .15 mgm. daily (10 years).
HISTORY: Congestive failure first appeared ten years previously.

See Answer on Page 197



The Department of Medicine, University of Arkansas Medical Center
James S. Taylor, M.D., Professor of Medicine



PUBLIC HEALTH AT A GLANCE

Fluoridation Progress in Arkansas

The progress of fluoridating the community water supplies within the state as a measure to prevent dental diseases has been very successful.

The progress shows through surveys, that the dental decay rate in children in many communities has been reduced as much as 60 per cent. The future holds the same health benefits for those cities and towns who have recently approved fluoridation for their citizens.

The listing below of the cities and small communities now fluoridating will help guide the medical and para-medical professions in their concern as to the fluoride content of the various water supplies in Arkansas.

ARKANSAS STATE DEPARTMENT OF HEALTH
BUREAU OF DENTAL HEALTH
May 1, 1969
FLUORIDATION — ARKANSAS

City	Date	
1. Little Rock	4-51	Little Rock Water Supply
2. North Little Rock		
3. Cammack Village		
4. Alexander		
5. Sylvan Hills		
6. Mabelvale		
7. McRae T.B. San.		
8. Sweet Home		
9. Sherwood		
10. Gravel Ridge		
11. College Station		
12. Wrightsville	5-64	
13. Pulaski County	1953	
14. Dixie Acres	6-55	
15. Jonesboro	10-51	
16. Walnut Ridge	1-52	
17. Springdale	11-52	
18. Lewisville	1-53	
19. Arkadelphia	5-53	
20. Camden	7-53	
21. Searcy	12-53	
22. Bald Knob	12-53	
23. Judsonia	12-53	
24. Harrison	5-54	
25. Newport	7-54	
26. West Helena	9-54	
27. Marianna	9-54	
28. Helena	10-54	
29. Bentonville	11-54	
30. Mountain Home	3-55	
31. Wynne	3-55	
32. Forrest City	3-55	
33. Clarksville	3-55	
34. Paragould	6-55	
35. Lamar	2-56	
36. Batesville	4-56	
37. Center Hill	1-57	
38. Crossett	2-58	
39. Berryton	11-58	
40. Malvern	2-59	
41. Hot Springs and Area	4-59	
42. Star City	1-60	
43. Morrilton	2-60	
44. Russellville	2-60	
45. Dumas	9-60	
46. Jacksonville	6-61	
47. Madison	12-61	
48. McCrory	2-62	
49. West Memphis	4-62	
50. DeWitt	6-62	
51. Trumann	6-62	
52. Warren	10-62	
53. Eudora	10-62	
54. Yellville	4-64	
55. Patterson	5-65	
56. Osceola	4-65	
57. Salem	5-65	
58. Monticello	9-65	
59. Dermott	10-66	
60. Caldwell	10-66	
61. Mammoth Spring	12-66	
62. Pocahontas	8-67	
63. Tyronza	9-67	
64. Mitchellville	9-67	
65. Blytheville	2-68	
66. Conway	6-68	
67. Lake Village	8-68	
68. Stuttgart	2-69	
69. Pine Bluff	3-69	
70. Hardin (Pine Bluff Supply)	3-69	
71. Beebe	4-69	
72. Hope		BLENDED WATER (Natural Fluoride)
73. Prescott		BLENDED WATER (Natural Fluoride)
74. Waldo		BLENDED WATER (Natural Fluoride)
75. Bradley		(Natural Fluoride)
76. Gravette		(Natural Fluoride)
77. Gurdon		(Natural Fluoride)
78. North Crossett		(Natural Fluoride)
79. Oakhaven		(Natural Fluoride)
80. Okay		(Natural Fluoride)
81. Sparkman		(Natural Fluoride)

TOTAL STATE POPULATION 1,925,000
POPULATION AVAILABILITY TO COMMUNAL WATER SUPPLIES 1,100,000
POPULATION NOW SERVED BY CONTROLLED AND NATURAL FLUORIDATION 790,000

CITIES WITH ORDINANCE PASSED FOR FLUORIDATION AND AWAITING INSTALLATION

1. Cabot
2. Corning
3. Hamburg
4. Marshall
5. Paris
6. Altheimer
7. Sheridan



EDITORIAL

Mountain Sickness

Alfred Kahn, Jr., M.D.

With the current interest in foreign travel and snow skiing, physicians everywhere should be prepared to warn their patients about a group of complaints known as mountain sickness. For example, it is a very disconcerting experience for South American travelers to fly from sea level, Lima, Peru, to the famed old mountain city of Cusco, and, instead of enjoying the view, muse a throbbing headache, and tachycardia due to the poor acclimatization to high altitude.

Several papers on mountain sickness containing excellent bibliographies have been published in The New England Journal of Medicine. Singh, Khanna, Srivastava, Lal, Roy, and Subramanyam (New England Journal of Medicine, Vol. 280, p. 175, Jan. 23, 1969) described their experience in 1925 patients with mountain sickness among troops serving in the Himalaya Mountains at altitudes of 11,000 to 18,000 feet. It was interesting that they found no correlation between the severity of the illness and increasing altitude. Wintry weather seemed to aggravate the symptoms.

Singh, et al. report that there was a time lag of 6 to 96 hours before the onset of symptoms, and this period was characterized by anti-diuresis in predisposed individuals. For two days, the respiratory rate of affected individuals and normals was about the same, but on the third day, the former was 23 per minute and the latter 21 per minute. The breathlessness of patients with mountain sickness increased upon lying down. Some cases had Cheyne Stokes respiration. One-third of the cases bordered on pulmonary edema, and these cases, if exercised, often developed collapse, fits, coma, etc. The pulse rate of patients fell into two groups: bradycardia and tachycardia. The most common and lasting clinical symptom was headache; more serious nervous system symptoms and signs consisted of papilloedema, blurred vision, nerve palsies, stupor, and coma. The duration of the clinical disabling symptoms was from two to five days.

Three patients in Singh's series died; they had edema of the lungs and brain.

Their physiologic studies showed a decreased expiratory peak flow rate. Peripheral blood flow decreased although total circulating blood volume was unchanged; cerebral and pulmonary blood flow was increased 40% to 80% respectively.

They tried treatment with various drugs. Aspirin relieved the headache but had no basic effects. Ammonium chloride was of no real value; the same held for potassium chloride. Diuresis with furosemide was quite effective within 6 hours to 48 hours.

The authors make a point of differentiating acute mountain sickness from high altitude pulmonary edema; a patient could simultaneously suffer from both. Ordinarily, acute mountain sickness is not relieved by giving oxygen, whereas high altitude pulmonary edema is, and, furthermore, the authors do not feel hypoxia is the direct cause of mountain sickness. The authors postulate in mountain sickness there is hypoxia which leads to pulmonary congestion with concommitant decreased peripheral blood flow; then increased cerebral blood flow occurs and this in turn is associated with increased cerebrospinal fluid pressure and cerebral edema. Singh recommends diuresis, morphine, and adrenal steroids as treatment.

Forwand, Landowne, Follansbee, and Hansen (New England Journal of Medicine, Vol. 279, p. 839, Oct. 17, 1968) studied the effects of an inhibator of carbonic anhydrase acetazolamide, on acute mountain sickness, which was to be dis-

tinguished by time of illness from chronic mountain sickness and hypoxia with its ready response to oxygen. Inasmuch as previous authors had suggested acute mountain sickness might be the result of respiratory alkalosis due to loss of carbon dioxide, Forwand, et al. decided to see if acetazolamide might not inhibit renal carbonic anhydrase and increasing bicarbonate excretion and thus alleviate the symptoms of acute mountain sickness.

To check their theory, Forwand tested 43 volunteers who were abruptly taken to an altitude of 12,800 feet. A double blind test of acetazolamide was performed; the subjects were monitored by blood and alveolar gas studies. The blood gas studies showed the group treated with acetazolamide had a lower blood pH, bicarbonate, and pCO2. The respiratory gas studies showed similar changes. The alveolar pO2 was slightly higher in the acetazolamide group as was the liters per minute of air breathed. Clinically, the authors found that headaches, abdominal distress, and sleeplessness, which were the principal symptoms, were less in the treated group than the controls. It was of interest that the carbon dioxide tension seemed to relate to headaches and gastro-intestinal symptoms.

Forwand felt that acetazolamide definitely helped relieve the symptoms of acute mountain sickness but he stated that he was unable to determine, with certainty, the "site or the mechanism of its beneficial effect"; other than the fact that alkalosis was prevented.

The practical application of these studies on acute mountain sickness are obvious. If the patient has acute mountain sickness, acetazolamide, furosemide, morphine, and adrenal steroids are helpful. If the patient is suffering from acute hypoxia, then oxygen inhalation is beneficial. Patients should be warned of the possibility of these two diseases when they are visiting mountainous areas so that appropriate medical programs can be instituted.

Physicians and Smoking

C. Lewis Hyatt, M.D., F.C.C.P.*

Chronic Obstructive Pulmonary Disease (largely pulmonary emphysema and bronchitis) is the fastest rising cause of disability according to O.A.S.I. disability records. Cancer of the lung, particularly bronchiogenic carcinoma, has shown the largest increase in incidence of any other malignancy in recent years. Diseases of the heart and blood vessels are by far the leading cause of death in the United States. This is especially true among physicians and like professional groups.**

The scientific evidence against excessive cigarette smoking has been thoroughly documented as related to these three leading causes of death and disability. This makes smoking a major health problem. About the only individuals who will not accept the evidence are those who themselves smoke or those who have a financial or political interest in tobacco.

Physicians, nurses and other health personnel who smoke give the strongest type of suggestion to their patients that smoking is really not harmful. This is a false and unfortunate impression. No amount of verbalization to the patient on the harmfulness of excessive cigarette smoking will be effective by a physician who smokes.

We are obligated to oppose excessive smoking by explanation, by example and by action.

* 515 North Main, Monticello, Arkansas.

** Taken from U. S. Public Health Service Vital Statistics.

MEDICINE IN THE NEWS

Little Rock—Doctors, nurses and all health professionals in the state may now call a toll-free Little Rock number and request medical library assistance—thus making medical library service available to all health professionals in the state more quickly than ever before.

The faster and more efficient library service for hospitals and health personnel is available through the Regional Hospital Medical Library Program. The Program is conducted by the University of Arkansas Medical Center Library through a grant from the Arkansas Regional Medical Program.

Before the toll-free telephone service was initiated Aug. 1, persons desiring medical information completed a medical information request form, mailed it to the Medical Center Library and sometimes waited a week for the reply. The new telephone service will shorten by a few days the length of time required to receive needed medical information.

Director of the library program is Mrs. Sally G. Kasalko, who also is ARMP librarian. She said the Program "will make the UAMC library collection immediately available to all health science professionals. We also will help improve facilities in local hospital libraries in an attempt to provide physicians and health professionals with the quickest and most accessible source of medical information."



Dr. Ross Fowler of Harrison, president of the Arkansas Medical Society, makes the first toll-free call to the University of Arkansas Medical Center Library requesting medical library materials.

Three types of reference services now are available: 1) ready reference—involving questions which may be answered quickly and easily over the telephone. 2) bibliographic searches—researching a chosen subject in indexes and other sources to provide loan of books and pertinent articles, and 3) interlibrary loan—obtaining from other medical libraries throughout the country materials not owned by the UAMC library.

"Workshops will be conducted for persons in charge of local hospital libraries," Mrs. Kasalko said. She said the workshops are designed to teach hospital librarians how to acquire, organize and use medical collections. The first workshop will be held Aug. 22-24 at the UAMC library.

Fifteen hospital librarians are registered to attend the first workshop representing hospitals in Stuttgart, Fort Smith, Forrest City, Mt. Ida, Little Rock, Batesville, Rogers, Bentonville, Helena, Jacksonville, Pocahontas, West Memphis, Hot Springs, and Russellville.

The workshops will include basic information on planning and equipping a small hospital library and on procedures for maintaining and servicing such a collection.

Consultant services also are available through the library program to assist hospital administrators and librarians in the planning and improvement of the physical makeup and the content of their medical libraries.

* * *

THE MONTH IN WASHINGTON

Washington, D. C.—The American Medical Association questioned whether the Department of Health, Education and Welfare has the authority to issue its recent regulation limiting physicians' fees under medicaid.

"We question whether the authority granted by the Congress embraces the promulgation of this regulation," Dr. Ernest B. Howard, execu-

tive vice president of the AMA, said in a letter to HEW.

"This regulation appears to reverse the roles of state and federal government established in the law itself."

The regulation limits most physicians' fees to the 75th percentile of the customary charge—the maximum customary fee of 75 per cent of the physicians in the area.

After offering HEW the cooperation of the AMA in its efforts to contain rising medicaid costs, Dr. Howard pointed out that the "comprehensive" care goal of the program could not be achieved "without substantial funding, both state and federal."

"Moreover, it has always been recognized that the intent of Title XIX (medicaid), when adopted, was to dissolve any barriers which existed between medical care available to the medically indigent and other citizens," the AMA statement said.

"It also recognized that payment to physicians participating in the government program should be on the basis of reasonable charges, i.e., usual charges of the physician within the customary range of charges for similar services in the community, so as to assure a broad range of participation by physicians in the program and eliminate one of the obstacles to the care of patients on the same level as that provided other persons in the community. This was essentially the approach taken in the January 25, 1969, regulations concerning "Reasonable Charges," in which "Customary charges which are reasonable" was established as the upper limit for payment for non-institutional services. We believe that the January 25th pronouncement more accurately comports with the Congressional intent expressed in Section 1903 (a) (30) of the Medicaid law, than does the new regulation. . . .

"In departing from this earlier standard, by establishing arbitrary limits on payments to individual practitioners, it should be recognized that the July 1 regulations may again raise a barrier to providing private care to the medically indigent.

"There can be no question that any fee abuses in the program, whether by individual practitioners or other providers, must be ferreted out and eliminated. On the other hand, the true effect of the proposed regulations must be kept in proper perspective, since physicians' fees represent only approximately 11% of the costs of the Medicaid program. Consequently, if the basic concern is with the total costs of the program, the remedy in our opinion, is not through regulations which restrict physicians' charges."

On the Congressional front, the medicaid law was amended to give the states some relief in fiscal difficulties arising from the program.

States now have until July 1, 1977, to submit comprehensive plans of medical care for all needy persons under medicaid. Under the original medicaid law, participating states had to come up with such a plan by July 1, 1975. But rising health care costs resulted in medicaid fiscal difficulties for so many states that Congress delayed the deadline for two years and relaxed other requirements to ease the financial bind.

One of the new amendments permits states to reduce their services under medicaid. In the past, they couldn't. But a state still cannot reduce overall medicaid spending.

Rep. Wilbur D. Mills (D., Ark.), chairman of the House Ways and Means Committee, said the changes in the law should give states some financial relief and also give Congress time to consider what long-range revisions are desirable in medicaid.

* * *

President Nixon said the nation will be confronted with a "massive" crisis in health care unless government and the private sector cooperates to hold down costs and to improve the system of delivery of medical services.

He made the statement in commenting on Health, Education and Welfare Department's "Report on the Health of the Nation's Health Care System." It carried the names of both HEW Secretary Robert H. Finch and HEW Assistant Secretary for Health and Scientific Affairs Roger O. Egeberg, M.D.

"This nation is faced with a breakdown in the delivery of health care unless immediate concerted action is taken by government and the private sector," the report said. "Expansion of private and public financing for health services has created a demand for services far in excess of the capacity of our health system to respond. The result is a crippling inflation in medical costs causing vast increases in government health expenditures for little return, raising private

health insurance premiums and reducing the purchasing power of the health dollar of our citizens."

The report said the medicaid program—"badly conceived and badly organized"—was a major factor in rapidly rising health care costs by attempting "to provide medical services for the poor by pushing them into the nation's already overburdened health care system without developing the capacity in the system to serve them and without building the capability in the states to manage the program."

The report also said overtaxed health resources are being used wastefully and not being expanded rapidly enough. And not enough attention is being given to preventive health care, the report said.

Two advisory groups were set up: a HEW Secretary's Task Force on Medicaid and Related Programs under co-chairmen HEW Undersecretary John G. Veneman and Walter J. McNerney, president of Blue Cross, and a special industry group with David J. Mahoney, president of Norton Simon, Inc., as chairman.

Dwight L. Wilbur, M.D., then president of the American Medical Association, congratulated the Nixon Administration for taking "such a thoughtful look at the accumulated problem that has been built up in the past as a result of hurriedly enacted programs, the buildup of unattainable expectations and creation of unsound administrative operations."

"Correcting the consequences of massive disruptions and past political errors will call for the cooperation and dedication in the government and private sectors," Dr. Wilbur said. "This includes physicians, other professionals, many in related fields, hospitals, government, insurance payors and many others."

Dr. Wilbur also welcomed a call by Finch and Dr. Egeberg for discipline through the profession itself of "the very few members of the medical profession who have reportedly abused the (medicare and medicaid) programs."

* * *

Recent testimony by AMA witnesses before Congressional committees included:

—Dr. O. L. Simenstad, member of the AMA Board of Trustees, before the Senate Monopoly (Nelson) Subcommittee:

"The advertising policies of the AMA have recognized consistently the uniqueness of drug advertising in that it should not be directed to the public, but to physicians, and because of the public interests involved, it should be responsibly presented. As the drug products in this country have become more sophisticated, the Association's advertising policies have undergone evolution. Initially, an 'ethical' manufacturer was required to disclose the formula of his advertised products. 'Secret nostrums' could not be advertised in responsible medical journals such as JAMA. Today, honest presentation of claims is the primary criterion. . . .

"The policy of the AMA has been to update the advertising standards as the drug field changes. Two of the basic tenets have remained unchanged, however. One is that 'the appearance of advertising in AMA publications is not an AMA guarantee or endorsement of the product or the claims made for the product by the manufacturer' and the other is that advertising space will not be sold unless 'the inclusion of advertising material does not interfere with the purpose of the publication'."

—Dr. Pierre Salmon, member of the AMA Committee on Aging, before the Senate Long-Term Care Subcommittee:

"We believe that the medical profession should take the lead in organizing 'community coordinating committees' to assume overall responsibility in coordinating available health facility services in the community. We have suggested that local medical societies invite representatives of the other health agencies and professions in the area to discuss and consider jointly the community's particular problems with regard to long-term care—both convalescent and custodial care. Some local medical societies have taken this initiative."

—Dr. Frederick C. Swartz, chairman of the AMA Committee on Aging, before the Senate Subcommittee on Health of the Elderly:

"Age is no bar to good medical or surgical treatment including open heart surgery, so long as the patient presents himself as a reasonably physiologically functioning unit to the physician.

"The medical and paramedical services—the physician and the para-physician personnel—must begin to realize that something can be done for diseases found among the oldsters. The days of condescension medicine to 'grandpap' and 'grandma' is at an end."

—Philip L. White, secretary of the AMA Council on Foods and Nutrition, before the Senate Committee on Nutrition and Human Needs:

". . . the United States needs to develop a national nutrition policy. . . . The development of goals in food production and distribution, the establishment of adequate levels of nutrient intake for individuals and groups of people, plans for the nourishment of our future expanded populations are but a few of the issues which require national attention."

—Dr. Henry Brill, chairman of the AMA Committee on Alcoholism and Drug Dependence, before the House Education Subcommittee:

"In the course of the AMA's work in this field, we have been profoundly impressed by the fundamental importance of public education about narcotic, depressant and stimulant drugs. In the first instance, of course, public information has a decisive impact on public attitudes and opinions, and in the long run this determines public policy. If drug taking for pleasure should ever become socially acceptable in this country and accepted as a harmless pastime, one could confidently predict that control of drug dependence would become impossible."

—Dr. Marvin A. Block, a member of the AMA Committee on Alcohol and Drug Dependence, before the Senate Subcommittee on Alcoholism and Narcotics:

". . . the crying need, aside from that of research and education, is for community facilities to treat and care for the alcoholic patient, who is entitled to the same rights and opportunities for treatment accorded other sick people."

* * *

AAGP Annual Assembly Held

The Arkansas Academy of General Practice, meeting in Fort Smith in mid-August, came away from their 22nd annual assembly hailing it as one of the best in several years. Sessions during the two-day program were held in Fort Smith's new municipal auditorium and were extensively covered by the city's newspaper and television media.

Arrangements for the meeting, which serves as a portion of the Academy's required course of continuing education for its members, were handled by Fort Smith physicians Kemal Kutait and Kenneth E. Lilly in cooperation with the group's executive secretary, Mrs. Wanda Wade, and their state officers.

The officers who served during the past year were: Dr. Alvin Strauss, Jr., of Little Rock, president; Dr. Guy U. Robinson of Dumas, president-elect; and Dr. Harold Hedges of Little Rock, secretary-treasurer.

Newly-elected officers include Dr. Robinson as president; Dr. W. H. Lane of Dover, president-elect; and Dr. Kemal Kutait of Fort Smith, vice-president. Dr. Hedges continues as secretary-treasurer.

* * *

Emergency Health Conference Hailed as Constructive First Step

"Are We Prepared?" That was the question posed by Dr. Ben N. Saltzman of Mountain Home in his keynote address which began the First Arkansas Conference on Emergency Health Services held August 22nd at the University of Arkansas School of Medicine.

From that ringing initial interrogative until Dr. C. Mark Vasu, Grand Rapids, Michigan, closed the day with his hard-hitting "down to the nitty gritty" presentation, the audience of nearly 400 policemen, firemen, doctors, lawyers, government officials, ambulance attendants, nurses, hospital administrators, and members of the general public enthusiastically involved themselves in a fast-paced workshop filled with hard questions and earnest efforts at the often harder problems—answering them.

The Conference was the culmination of some three months of planning and work by individuals who represented the thirty-five organizations that sponsored the program.

Highlighting the importance of the session, the week August 17-22 had been proclaimed "Emergency Health Services Week" by Lieutenant Governor Maurice Britt, acting for Governor Rockefeller. (See related photograph this section of Journal.) As a result of the interest and concern demonstrated by health leaders, wide coverage of the proceedings was given by the radio, television, and newspaper media of the State. Conference sponsors are hopeful that the exposure will aid the efforts and progress toward solving this major health problem in Arkansas, one that faces the entire country.

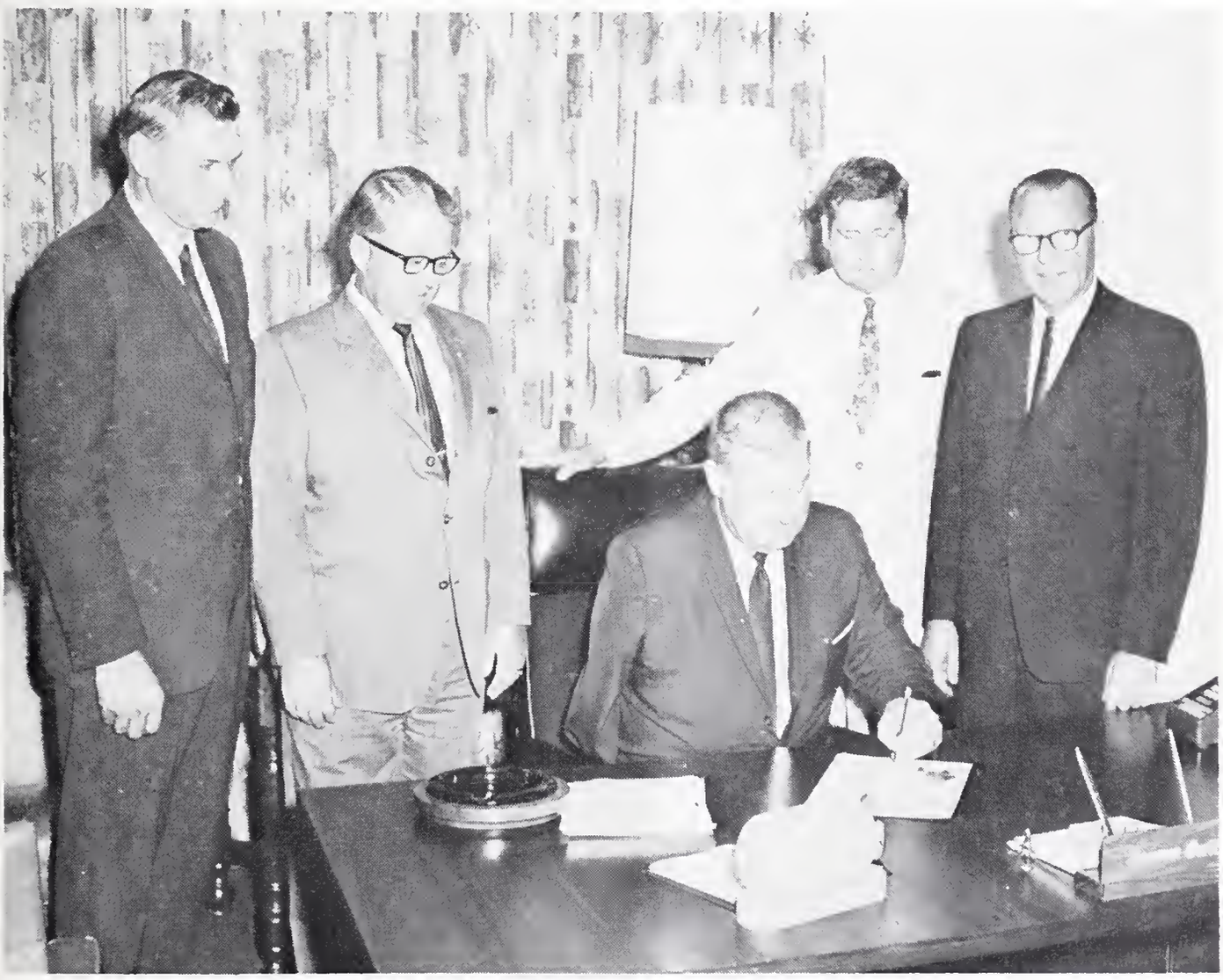
The Arkansas Medical Society, through its state headquarters staff and individual members, made an all-out attempt to effectively support the Emergency Health Services Conference. It

is believed that our sponsorship was positive, well-received, and demonstrated some of the unique contributions physicians are capable of making in the process of finding solutions for the problems encountered in this particular health field. More broadly, the participation showed to an extent the large measure of concern felt by Arkansas doctors for the public welfare in general.

The physicians of Arkansas and the profession were well-represented by the following list of doctors who took part in the program. Dr. Joseph A. Norton, Dr. Winston K. Shorey, Dr. Ben N. Saltzman, Dr. Raymond Read, Dr. Gilbert S. Campbell, Dr. Porter Rogers, Jr., Dr. Dola Thompson, Dr. W. Mage Honeycutt, Dr. George H. Chambers, Dr. J. Warren Murry, Dr. Doyne Williams, Dr. Fred T. Caldwell, Dr. Carl L. Williams, Dr. James E. Doherty, Dr. Stevenson Flanigan, Dr. F. T. Fraunfelder, Dr. John H. Bowker, Dr. Robert M. Bransford, Dr. B. W. Thompson, Dr. John V. Satterfield, Dr. Samuel B. Thompson, Dr. Fred J. Gordy, Dr. Grover D. Poole, and Dr. Ross Fowler.

Special mention is made of the work done by Mrs. Jo Jackson of the Health Planning Program and Mr. Bob Donaldson of the University of Arkansas School of Medicine staff.

Looking to the future, Conference leaders hope that the workshop will prove to have been the all-important first step leading to a cohesive, effective, and comprehensive emergency health services system for the people of Arkansas. They have extended a cordial invitation to one and all to join the effort since—as one of the speakers expressed it—"It is incumbent upon us *all* to minimize human loss and suffering resulting from accidental catastrophes."



Emergency Health Services Conference sponsors look on as Lieutenant Governor Maurice Britt signs "Emergency Health Week" proclamation. (From left to right: J. T. Jaynes, Director of State Health Department Safety Division; Dr. Jack Kennedy, President-Elect of the Arkansas Medical Society; Lieutenant Governor Britt; Ed Rensch, Jr., Director of Health Planning Program; and Y. W. Welchel, Coordinator of State Public Safety.)

Constitutional Convention
Proposal 112: Medicine's Objection

The following editorial from the August 22, 1969, issue of the ARKANSAS DEMOCRAT is reprinted with the permission of the newspaper editor.

"The doctors had a point

"The proliferation of separate state boards and agencies—at last count there were 170—is one of the most objectionable features of state government. The boards waste money and diffuse responsibility.

"So the Constitutional Convention a few weeks ago quite properly decided on a proposal for reorganization of the executive department that would have required reducing the number of agencies to no more than 20 and making the governor more responsible for this operation. But Wednesday the convention hit a snag in the person of the Arkansas Medical Society, which objected mightily to the possibility that the State Medical Board might lose some of its independence. As they always do, the doctors put on terrific pressure. Wednesday the delegates were still resisting, but by noon yesterday, not only was the medical board exempted but the entire reorganization procedure had been tabled, which meant that it would almost certainly be left out of the proposed new constitution. But yesterday afternoon, the reorganization plan was alive again but it had been amended to exclude 'professional licensing and disciplining boards' from the 20 limitation.

"This was a wise compromise. While the original proposal had real merit, the doctors have a good point: The practice of medicine is too vital to the public welfare to take even the slightest risk that its regulation could be subject to politics.

"Had their board been included in the reorganization plan, the doctors feared that they would lose control of their executive secretary, that the fees might be lumped with other fees and be used for different purposes (maybe even withheld to apply pressure) and, worst of all, that the medical board and the boards for dentistry, nursing, pharmacy, veterinary medicine, etc., might be combined into one. Such super boards have not worked in other places, the medical society says, because each field is so specialized that it has to be supervised by its own practitioners. Also, separate boards provide for a good check on each other in the practice of medicine. For instance, if the Osteopathy Board discovers that a medical doctor is out of line, you can be sure that he will report it to the State Medical Board for action, whereas if they all came under one big board, personalities and jealousies would complicate the operation until the regulatory function could come to standstill.

"Excluding the healing arts was a good idea in our opinion. Going so far as to include all professional boards is open to debate because it's always hard to get agreement on what is a profession and what is an occupation. One of the delegates estimated yesterday that about 22 boards would be exempt from consolidation because of this amendment. If this is true the amendment has not hurt much at all, especially in view of the fact that without it the whole reorganization plan was in jeopardy. Forty or forty-five separate agencies are not as good as 20 but they are certainly better than 170."

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Council Minutes, Arkansas Medical Society
Saturday, August 16, 1969

The Council of the Arkansas Medical Society met at 7:00 p.m. on Saturday evening, August 16th, at the Hardscrabble Country Club in Fort Smith. Present were: Dr. and Mrs. Elvin Shuffield, Dr. and Mrs. Ben Saltzman, Dr. Paul Gray, Dr. and Mrs. Hugh Edwards, Dr. and Mrs. Thomas E. Townsend, Dr. and Mrs. George Wynne, Dr. and Mrs. Kenneth R. Duzan, Dr. John Wood, Dr. and Mrs. Karlton Kemp, Dr. Robert McCrary, Dr. and Mrs. James C. Bethel, Dr. and Mrs. Payton Kolb, Dr. and Mrs. Stanley Applegate, Dr. and Mrs. Henry V. Kirby, Dr. C. C. Long, Dr. and Mrs. Charles Wilkins, Dr. and Mrs. H. W. Thomas, Dr. and Mrs. L. A. Whittaker, Dr. and Mrs. C. Lewis Hyatt, Dr. C. R. Ellis, Dr. and Mrs. James M. Kolb, Dr. W. R. Brooksher, Dr. and Mrs. Winston K. Shorey, Dr. and Mrs. Edgar J. Easley, Dr. and Mrs. Wright Hawkins, Dr. and Mrs. James M. Post, Dr. and Mrs. T. A. Feild, Mr. Don Thompson, Dr. and Mrs. Kenneth New, Mr. and Mrs. Paul Schaefer, Mr. Paul Berry, and Miss Leah Richmond.

Chairman Wood introduced guests present and the new members of the Council.

The chairman of the Annual Session Committee, Dr. Wright Hawkins, presented plans

made to date for the 1970 Annual Session.

Approved: John P. Wood, M.D.
Chairman of the Council

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Council Minutes, Arkansas Medical Society
Sunday, August 17, 1969, 12:00 Noon
Downtown Holiday Inn, Fort Smith

The Council of the Arkansas Medical Society met at 12:00 noon on Sunday, August 17th, at the Downtown Holiday Inn in Fort Smith. Present were: Wood, Fowler, Kennedy, Shuffield, Saltzman, Gray, Edwards, Townsend, Wynne, Duzan, Kemp, McCrary, Bethel, P. Kolb, Applegate, Kirby, Long, Koenig, Wilkins, Thomas, Whittaker, Ellis, Verser, J. Kolb, Brooksher, George Mitchell, Winston Shorey, John Herron, Edgar Easley, Wright Hawkins, James Post, T. A. Feild, Carl Williams, Leo Davenport, Morton Wilson, H. M. Sims, F. H. Feder, Mr. Don Thompson, Mr. Eugene Warren, Mr. Buford Krebs, Mr. Paul Schaefer, Mr. Paul Berry, and Miss Leah Richmond.

Chairman Wood called on the president of the Sebastian County Medical Society for introduction of those members of the county society attending the meeting as guests.

Mr. Schaefer introduced Mr. Paul Berry, assistant to the executive vice president in the headquarters office. Mr. Berry spoke briefly.

The Council transacted the following business:

I. Chairman Wood called on the Society legal counsel, Mr. Warren, for discussion of Committee Proposal No. 112 of the Arkansas Constitutional Convention. Mr. Warren recommended that an amendment be requested to Committee Proposal No. 112 to exclude those State licensure boards which are self-sustaining. The Council voted approval of this recommendation and requested Mr. Warren and Dr. Shuffield to work with other licensure boards not dependent on tax funds to get such boards excluded from Proposal No. 112.

II. Dr. James M. Post, president of the Sebastian County Medical Society, presented a resolution from his county society regarding the Arkansas State Medical Board's reciprocal licensure. After discussion by Mr. Warren and Dr. Verser, as well as other members of the Council, Chairman Wood asked that the State Medical Board continue to work toward a solution of the problem. (See copy of resolution attached.)

III. Dr. Kenneth G. Jones' proposal regarding drafting of legislation covering malpractice was discussed by Mr. Warren. He advised the Council that the American Bar Association was presently working on the problem and that as soon as they had come up with a proposal he would so advise the Council.

IV. Mr. Don Thompson, president of the Arkansas Chapter of the Student AMA, reviewed plans for the chapter during the coming year. Dr. Fowler reported on a meeting between members of the Society Executive Committee, Society SAMA Liaison Committee and the officers of SAMA. Upon the motion of Koenig and Applegate, the Council voted $150 to assist the SAMA chapter with their picnic in the fall for the freshman class at the Medical School.

V. Dr. Thomas announced that Miss Leah Richmond, administrative assistant, had on August 13th, soloed an airplane. To mark the occasion, Dr. Thomas pinned a pair of silver wings on Miss Richmond.

VI. Buford Krebs of Arkansas Blue Cross-Blue Shield presented proposed changes in the group health plan for members of the Arkansas Medical Society. The changes consist of increasing the room allowance to $30; converting to 80-20, co-pay usual, customary and reasonable surgical schedule; abandoning the graduated corridor to require only $100 corridor before activating major medical. Upon the motion of Saltzman and Wynne, the Council approved the proposed changes.

VII. Delegates to the American Medical Association reported on the recent New York meeting. After considerable discussion, and upon the motion of Townsend and Shuffield, the Council voted to communicate with the AMA to the effect that we request all resolutions to be presented at the first meeting of the House of Delegates of AMA be submitted in an official form no less than thirty days prior to the meeting and that such communication

should go to the president and executive vice president of AMA and to all state medical societies.

VIII. Mr. Schaefer discussed developments regarding the Tax Reform Bill, advising that the bill includes a section validating by legislation the Internal Revenue Service ruling on "unrelated business income." It requires payment of income tax on receipts from journal advertising, exhibits and possibly revenue from security investments.

Mr. Schaefer advised the Council of communications with the AMA Washington office regarding inclusion of retirement-benefits limitation for partnerships under medical corporations in the Tax Reform Bill and the failure of AMA to act to prevent such legislation. Upon the motion of Wynne and Townsend, the Council approved writing the executive vice president of the AMA, Dr. Howard, in this regard.

IX. Chairman Wood advised that the Medical Society had been requested to nominate a board-certified anesthesiologist and a fellow of the American College of Chest Physicians for the State Inhalation Therapy Examining Committee created by the Legislature. Dr. James R. Rasch and Dr. F. E. Greifenstein have been nominated for the positions by their respective specialty sections. Upon the motion of Shuffield and Saltzman, the Council voted to approve the nominations pending getting the nominations in writing.

X. Dr. Fowler spoke briefly regarding measles immunization, suggesting that the Society take action in the near future to try to implement a German measles immunization campaign similar to the Society-sponsored campaign several years ago for the Sabin oral polio vaccine. This matter was referred to the Immunization Committee for action.

XI. Upon the motion of McCrary and Koenig, the Council approved a change of the records to accurately reflect "disability" as the reason for affiliate membership for Dr. H. Clay Chenault of Garland County.

XII. Upon the motion of Saltzman and Shuffield, the Council voted to recommend that the Constitutional Revisions Committee draft a change in the by-laws to provide dues-exempt membership for those young physicians entering military service immediately following internship or residency.

XIII. Mr. Schaefer notified the Council of the proposed formation of a Health Careers Council. It was agreed that the Executive Committee would investigate and report back to the Council at its next meeting.

XIV. T. E. Townsend presented his resignation as a member of the Council and nominated Raymond Irwin of Pine Bluff as his successor. Upon the motion of Townsend and Shuffield, Dr. Irwin was unanimously elected to the position of councilor for the fourth district to fill the unexpired term of Dr. Townsend.

The meeting adjourned at 2:40 p.m.

Approved: John P. Wood, M.D.
Chairman of the Council

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Resolution From Sebastian County Medical Society

We are resolved that certain inequitable practices existing in Arkansas medical licensure should be corrected. We object to the failure of Arkansas to give full reciprocity to holders of licenses from states giving full reciprocity to Arkansas license holders.

We recommend that the Arkansas State Healing Arts Board grant reciprocity for the same state licenses recognized by the Arkansas State Medical Board. The present conflict between the reciprocity lists of these two Arkansas boards is highly artificial. A United States medical graduate duly examined in the basic sciences by a state medical board, a state basic science board, or the National Board of Medical Examiners is entitled to recognition in Arkansas. To claim that a medical graduate has not taken basic science examinations only because it was not administered by a "Basic Science Board" is fallacious.

Our resolution of protest is generated in the hope that the healthy flow of qualified physicians from other states into Arkansas will not suffer from this present limitation in reciprocity.

Correction of this inequity is also necessary in

order to maintain the validity of the reciprocity rights due those holding Arkansas medical licenses.



AMA Schedules Lectures on Nutrition at Arkansas Colleges

Therese Mondeika, Director, Section on Nutrition Information, American Medical Association, announced recently the schedule of American Medical Association lectures and seminars to be given at colleges and universities during the current academic year.

Dr. Harold H. Sandstead, Assistant Professor of Biochemistry and Medicine, Vanderbilt University, will speak on "The Role of Zinc in Human and Animal Nutrition" at the following schools:

Henderson State College in Arkadelphia
Wednesday, October 18
Ouachita Baptist University in Arkadelphia
Friday, May 15, 1970 — 3:00 p.m.

Dr. Walter G. Unglaub, Professor of Nutrition at Tulane University School of Public Health and Tropical Medicine, School of Medicine in New Orleans, will speak on "Studies of Human Nutritional Status" at the following schools:

Arkansas Polytechnic College in Russellville
Monday, October 20
State College of Arkansas in Conway
Tuesday, October 21
Agricultural, Mechanical and Normal College in Pine Bluff
Wednesday, October 22 — 10:00 a.m.
Southern State College in Magnolia
Thursday, October 23

Special appreciation and applause is extended to the Medical Societies of Jefferson and Columbia counties for the co-sponsoring of this program in their respective areas.

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Little Rock Research Club Meetings

The Little Rock Research Club has announced its fall semester schedule of presentations. Research seminars will be held from 10:00 to 11:00 a.m. on Saturday mornings in Room 5E19 at the University of Arkansas Medical Center in Little Rock. The schedule is as follows:

October 18th—Dr. Fernando Padilla, "The Sickling Phenomenon in SC- and S-Thalassemia Disease"
November 8th—Dr. Robert T. Bulloch (title to be announced)
November 15th—Dr. James S. Adamson, "Transport of Ferritin and Rate of Phagocytosis of Ferritin by Pulmonary Macrophages"
November 22nd—Open
November 29th—Dr. Louis L. Sanders, Mr. Mike Knott, and Mr. Robert Derrick, "Studies on Spontaneous Diabetes in Rabbits"
December 6th—Dr. Owen W. Beard, "Long-term Anticoagulant Therapy After Myocardial Infarction—Combined International Study"
December 13th—Dr. Arthur Haut (title to be announced)
December 20th—Dr. Eleanor Lipsmeyer, "In Vitro Studies in Delayed Hypersensitivity"
January 3rd—Dr. Marvin L. Murphy, "Observations in Cor Pulmonale"
January 10th—Dr. Joseph H. Bates (title to be announced)
January 17th—Drs. B. Soloff and F. Padilla, "The Nature of Hemaglobin Crystals in SC- and S-Thalassemia Disease"

Physicians interested in further details may contact Dr. James E. Doherty, president of the Little Rock Research Club at 300 East Roosevelt Road, Little Rock.

* * *

First Annual Burn Symposium

Combined University of Arkansas Medical Center and Arkansas Children's Hospital
Saturday, October 25, 1969
9:00 a.m. to 12:00 noon

Conference Room, Arkansas Children's Hospital
804 Wolfe St., Little Rock

Distinguished Guest Speaker—Colonel Basil Pruitt, U. S. Army Institute of Surgical Research, Brooke Army Medical Center, Fort Sam Houston, San Antonio, Texas.

Participants—Fred Caldwell, M.D., Professor of Surgery, University of Arkansas Medical Center, and Harry Hayes, Jr., M.D., Associate Clinical Professor of Surgery (Plastic), University of Arkansas Medical Center.

8:30—Registration
9:00-10:00—Welcome address by Mr. Clyde

Nevill, Administrator, Arkansas Children's Hospital
Introduction of Distinguished Guest and Symposium Participants
Resuscitation and Immediate Care of the Burned Patient

10:00-11:00—Tour of the Burn Center
The local care of the burn wound (homografts, heterografts and topical chemotherapy)

11:00-12:00—Outline of different avenues of referral for the severely burned child or adult in Arkansas
Panel Discussion with questions and answers from the floor.

12:00—Adjournment

Registration fee is $5.00 per person.

This Syposium is open to all members of the Medical Profession. Because of space limitations the attendance will have to be limited. (This Symposium is being held on the same day as the University of Arkansas Razorback and Wichita State football game in Little Rock.) Please make reservations early.

This Symposium carries a credit of 3 hours, approved by the Arkansas Academy of General Practice.

For registration apply to: Office of Continuing Education, University of Arkansas Medical Center, 4301 West Markham, Little Rock, Arkansas 72201.

RESOLUTIONS



Dr. Virgle E. Lyons

WHEREAS, the recent death of Dr. Virgle E. Lyons, a member of the Pulaski County Medical Society for thirty-four years, is hereby noted with sorrow by his colleagues; and

WHEREAS, Dr. Lyons had served the community in his contribution to the health needs of his patients and by his interest in various civic organizations and in his church;

BE IT THEREFORE RESOLVED: That the members of the Society extend their deepest sympathy to Dr. Lyons' family; and

That this resolution be made a part of the permanent records of this Society; and

That copies of this resolution be forwarded to Dr. Lyons' family and to the Journal of the Arkansas Medical Society for publication.

By Action of the Memorials Committee
T. Duel Brown, M.D., Chairman
Henry Hollenberg, M.D.
Robert Watson, M.D.

Read and approved by
Executive Committee
August 20, 1969

Dr. J. K. Donaldson

WHEREAS, in order to express themselves on the recent loss of Dr. J. K. Donaldson, the members of the Pulaski County Medical Society do pause with respect; and

WHEREAS, Dr. Donaldson was for thirty-three years a member of this Society, during which time he devoted himself to the high calling of teaching the art and science of medicine and to the practice of medicine in this community; and

WHEREAS, Dr. Donaldson contributed to the betterment of the profession in his authorship of articles in medical journals and textbooks;

BE IT THEREFORE RESOLVED: That this resolution be made a part of the permanent records of this Society; and

That a copy of this resolution be forwarded to Dr. Donaldson's wife as an expression of the sincere sympathy of the Society membership; and

That a copy of this resolution be forwarded to the Journal of the Arkansas Medical Society for publication.

By Action of the Memorials Committee
T. Duel Brown, M.D., Chairman
Henry Hollenberg, M.D.
Robert Watson, M.D.

Read and approved by
Executive Committee
August 20, 1969

Dr. Ben Dallas Means

WHEREAS, in order to express themselves on the recent death of Dr. Ben Dallas Means, the members of the Pulaski County Medical Society do pause with respect; and

WHEREAS, Dr. Means was a member of this Society for twenty-five years and his contribution

to the health and well-being of many of the persons in this community will be long remembered and appreciated; and

WHEREAS, the members of this Society wish to convey to Dr. Means' family their sincere sympathy;

BE IT THEREFORE RESOLVED: That this resolution be incorporated in the permanent records of the Society; and

That a copy of this resolution be forwarded to Dr. Means' family; and

That a copy of this resolution be forwarded to the Journal of the Arkansas Medical Society for publication.

By Action of the Memorials Committee
T. Duel Brown, M.D., Chairman
Henry Hollenberg, M.D.
Robert Watson, M.D.

Read and approved by
Executive Committee
August 20, 1969

Dr. Reginald Victor Bennett

BE IT RESOLVED, that the Garland County Hot Springs Medical Society acknowledge the contributions of Dr. Reginald Victor Bennett made to this community.

He was well trained in his chosen specialty of Orthopaedic Surgery, and his knowledge and ability were of great value to his many patients. It is a matter of much regret that his professional career was shortened at an early age.

BE IT FURTHER RESOLVED, that a copy of this Resolution be sent to his wife and family, to the State Medical Journal, to the local press, and be spread on the minutes of the Society.

Ralph M. Patterson, M.D., President
Louis R. McFarland, M.D., Secretary
Gaston A. Hebert, M.D., Chairman,
Resolutions Committee

Dr. William E. Gray

BE IT RESOLVED, that the Garland County Hot Springs Medical Society pay special tribute to our recently departed member, Dr. William E. Gray. Dr. Gray possessed superior knowledge and ability in his specialized field of Roentgenology, and he exhibited a profound dedication to his work that has probably not been surpassed during the history of our Society.

BE IT FURTHER RESOLVED, that we acknowledge our debt for his contribution to the community and to the medical profession.

BE IT FURTHER RESOLVED, that a copy of this Resolution be sent to his wife and family, to the State Medical Journal, to the local press, and be spread on the minutes of the Society.

Ralph M. Patterson, M.D., President
Louis R. McFarland, M.D., Secretary
Gaston A. Hebert, M.D., Chairman,
Resolutions Committee

Dr. Euclid M. Smith

BE IT RESOLVED, that the Garland County Hot Springs Medical Society pay special tribute to our recently departed member, Dr. Euclid Monroe Smith.

Dr. Smith was widely known for his many accomplishments. He was engaged in the private practice of medicine for some thirty years, interrupted only by his service in the United States Air Force during World War II. He was past President of the Arkansas Medical Society, also a Trustee of the University of Arkansas from which he received an Honorary Degree. It was the result of his efforts that an international conference on rheumatology was held here in Hot Springs. He evidenced marked devotion to the medical profession and his untimely death will result in much regret.

BE IT FURTHER RESOLVED, that a copy of this Resolution be sent to his wife and family, to the State Medical Journal, to the local press, and be spread on the minutes of the Society.

Ralph M. Patterson, M.D., President
Louis R. McFarland, M.D., Secretary
Gaston A. Hebert, M.D., Chairman,
Resolutions Committee



PERSONAL AND NEWS ITEMS

Dr. Saltzman Is On International Rotary Committee

Evanston, Ill.—Dr. Ben N. Saltzman of Mountain Home will serve on an important committee of Rotary International during the 1969-70 Rotary year, according to a recent announcement from RI President James F. Conway of Rockville Centre, N. Y.

A Rotarian for more than 20 years, Dr. Saltzman has been named to the nominating committee for Rotary International president, 1971-72. He will work with Rotarians from Mexico, Canada, Finland, India, England, New Zealand and the United States in the search for a man to lead the international service organization in two years.

The committee is formed now so that its candidate may go before next year's convention as the nominee for president-elect. Each RI convention chooses both a new president and a president-elect to take office the following year.

Dr. Saltzman is well versed in the work of Rotary. He has served as president of the Rotary Club of Mountain Home, and for Rotary International as director, district governor, committee chairman and as a trustee of the Rotary Foundation.

Active in the professional affairs of his home state, Dr. Saltzman is the state representative for the National Tuberculosis Association and is a director and executive committee member of the Arkansas Division of the American Cancer Society. He also is chairman of the Council on Rural Health of the American Medical Association, and is a past vice-president of the Flying Physicians Association.

Medical Care for Hollywood Visitors

Every doctor in the Mountain Home area took one assigned day as the physician on the "scene" during the recent on-location filming of American International's production "Bloody Mama" in that locale. The service proved most useful as several minor accidents occurred during the shooting as large crowds developed each day, curious about the film-making process and the "stars" involved.

Dr. Feild Appointed

Dr. T. A. Feild of Fort Smith has been appointed to a term on the Fort Smith Civil Service Commission.

Dr. Thorn Re-Elected

Dr. Harvey B. Thorn, Jr., has been re-elected to active membership in the American Academy of General Practice.

Medical Examiner Commission

Dr. Winston K. Shorey, dean of the University of Arkansas School of Medicine, and Dr. J. T. Herron, the state health officer, are members of the Medical Examiner Commission which announces Dr. Rodney F. Carlton as the newly appointed state medical examiner.

Doctors Locate

Dr. Kenneth R. Duzan announces the association of Dr. Wayne G. Elliott with him in the practice of Pathology at 443 West Oak Street in El Dorado.

Drs. B. P. Briggs, V. L. Toombs and G. A. Buchanan make known the association of Drs. H. Frazier Kennedy and Thomas W. Smith in the Arkansas Pediatric Clinic in Little Rock.

OBITUARY

Dr. P. L. Hathcock

Dr. P. L. Hathcock died August 27, 1969. Born in 1878 near Cave City, Dr. Hathcock had practiced medicine since 1902 and in Fayetteville since 1920. He received the degree of Doctor of Medicine from Vanderbilt University Medical School in 1901.

He held membership in the Washington County and Arkansas Medical Societies and the American Medical Association. Dr. Hathcock had been honored by the State Society as 50 year member some time ago.

He is survived by two sons, Dr. Preston Hathcock of Fayetteville and Dr. Alfred H. Hathcock of Batesville; a daughter, and six grandchildren.

* * *

Dr. Phillip Gordon Remine

Dr. Phillip Gordon Remine died August 21, 1969. Dr. Remine, 48, was a resident and general surgeon in Fort Smith for fourteen years. He was a graduate of the Medical College of Virginia.

A former Surgical Fellow of the Mayo Clinic, he held memberships in the Sebastian County and Arkansas Medical Societies, the American Medical Assocation, the American College of Surgeons, and the Southwestern Surgical Congress.

Survivors include his wife, Mrs. Elizabeth Ann Remine; two daughters; his mother; and his brother.

Transplantation of Cadaveric Kidneys From Patients With Hepatorenal Syndrome

M. H. Koppel *et al.* (VA Center, Los Angeles) *New Eng J Med* 280:1367-1371 (June 19) 1969

A kidney from each of five patients, and both kidneys from a sixth patient dying with the hepatorenal syndrome (severe hepatic failure, oliguria, azotemia, hyponatremia, and urinary sodium of less than 5 mEq/day) were transplanted into seven patients with end-stage kidney disease whose liver function was normal. Diuresis and improvement of renal function occurred in all but one recipient. Because of postoperative complications, two kidneys were removed after diuresis had occurred. Four transplanted kidneys achieved stable function for six months or longer, with creatinine clearances of 25, 42, 50, and 52 ml/min. These observations clearly indicate that the hepatorenal syndrome is functional in nature and potentially reversible.

ANSWER—What's Your Diagnosis?

DIAGNOSIS:

Leukemio.

X-RAY FINDINGS:

Bone destruction in the metaphyseol regions with extensive periosteal new bone formation.

ANSWER—Electrocardiogram of the Month

RATE: 90 RHYTHM: Sinus Arrhythmia

PR: .20 sec. QRS: .15 sec. QT: .40 sec.

SIGNIFICANT ABNORMALITIES:

Occosionol PAC, PVC.

Prolonged QRS c deloy on the left.

INTERPRETATION: Abnormol

Left bundle bronch black.

Occosianol multifocol premoture systoles.



NEW MEMBERS

Pulaski County Medical Society announces the recent addition of eight new members to its membership roll.

New members are: Dr. Johnson Joshua Baker, Dr. Ewin S. Chappell, Dr. Frank Peironnet Cantrell, Dr. Normabelle Helmen Conroy, Dr. John Wayne Joyce, Dr. Clodius Garnett Massey, Dr. Thomas Patrick Rooney, and Dr. John Lofton Wilson.

* * *

DR. JOHNSON JOSHUA BAKER is a native of Magnolia. He attended Southern State College and received a B.S. from the University of Arkansas in 1960. He was graduated in 1962 from the University of Arkansas School of Medicine, interned at Baptist Memorial Hospital in Memphis, and did a residency in Urology at the University of Missouri in Columbia. Dr. Baker served as a major in the United States Public Health Service from 1963 until 1965.

A member of Alpha Omega Alpha and the Candidate Group, American College of Surgeons, Dr. Baker is associated with Drs. Headstream and Logan in the practice of Urology at 500 South University in Little Rock.

* * *

DR. EWIN S. CHAPPELL is a native of Flatwoods, Tennessee. He received his pre-medical education at the University of Arkansas and his M.D. from the University of Arkansas School of Medicine in 1938. After interning at St. Elizabeth's Hospital, Washington, D. C., Dr. Chappell completed a residency in Psychiatry at the Menninger Foundation School of Psychiatry, Topeka, Kansas. He is a clinical professor of that specialty at both the Tennessee and Arkansas schools of medicine. Dr. Chappell served five years as a major with the Army Medical Corps during World War II. He has been with the Veterans Administration over twenty years in Topeka, North Little Rock, and Memphis.

Dr. Chappell is board certified in Psychiatry and is a member of the American Psychiatric Association and Southern Psychiatric Association. He is in practice at the Arkansas State Hospital in Little Rock.

* * *

DR. FRANK PEIRONNET CANTRELL attended Little Rock Junior College and was a 1950 graduate of the University of Arkansas School of Medicine. He interned at St. Louis City Hospital in Missouri. Subsequently, he was in residency training in Internal Medicine at both Kennedy Veterans Administration Hospital in Memphis and Veterans Administration Hospital in Atlanta, Georgia.

Dr. Cantrell practiced at Hot Springs for a short time and had been in practice at Texarkana for ten years before locating in Little Rock. Board certified by the American Board of Internal Medicine, Dr. Cantrell was a member of the Miller County Medical Society until 1967. He is now practicing in Suite 817, University Tower Building, in Little Rock.

* * *

Born in South Bend Indiana, DR. NORMABELLE HELMEN CONROY received an A.B. degree from Indiana University and an M.A. from the University of Buffalo. She was graduated from the Chicago Medical School, Chicago, Illinois, in 1947. Internship was done at the Swedish Covenant Hospital of that city. Dr. Conroy practiced at San Antonio, Texas, from 1952 until 1962. She completed a psychiatric residency at the Arkansas State Hospital in 1968. Dr. Conroy is a member of the American Psychiatric Association and the American Medical Women's Association.

Dr. Conroy's office address is 9501 Rodney Parham Road, Little Rock.

* * *

DR. JOHN WAYNE JOYCE, native of Fort Smith, attended the University of Arkansas at Fayetteville and was graduated in 1960 from the University of Arkansas School of Medicine. Dr. Joyce interned and completed a residency at University Hospital in Little Rock. Certification by the American Board of Radiology was conferred upon him in 1968.

Dr. Joyce was an instructor at the University

of Arkansas Medical Center from January of 1968 until June of 1969. Since July, Dr. Joyce has been associated with Drs. Scruggs, Bearden, Lane, Brenner, and Langston, Radiology Consultants, with offices at 1612 Maryland, Little Rock.

* * *

DR. CLODIUS GARNETT MASSEY was born in West Helena. He attended the University of Arkansas and received his M.D. from the University of Arkansas School of Medicine in 1960. He interned in Dallas at Parkland Memorial Hospital. Dr. Massey served as a captain in the United States Air Force from 1961 until 1964. His residency was done at the University of Arkansas School of Medicine in Little Rock, 1964-1967. His teaching appointments have included instructorships at the University of Arkansas School of Medicine and at the University of Southern California.

Since September, Dr. Massey has been associated with the Diagnostic Clinic of North Little Rock, 400 Pershing Boulevard.

* * *

DR. THOMAS PATRICK ROONEY, a native of Kansas City, Missouri, attended Kendrick College at St. Louis and received an A.B. degree from Rockhurst College at Kansas City. His M.D. degree was received from St. Louis University School of Medicine in 1961. After internship at U. S. Naval Hospital in Great Lakes, Illinois, he completed a residency in Orthopedics at Charity Hospital of New Orleans in 1969. He served as an instructor in Orthopedics at Tulane University Medical School while in residency.

Dr. Rooney is now located at 412 Cross Street in Little Rock for the practice of Orthopedics.

* * *

DR. JOHN LOFTON WILSON was born in Wheatcraft, Kentucky. He received a B.S.M. degree from Little Rock University in 1960. From 1955 until 1959, he was on active duty with the United States Air Force. He was graduated from the University of Arkansas School of Medicine in 1964. His internship was done at Marion County General Hospital in Indianapolis, Indiana. A residency in Orthopedics was finished at the University of Arkansas Medical Center earlier this year.

Dr. Wilson now practices Orthopedics at 601 North University, Little Rock, in association with Dr. Richard M. Logue and Dr. Larry E. Mahon.



Investigation of Influence of Ionized Radiation Upon Erythrocytes

P. Gerhardt (Medizinsches Strahleninstitut der Universität, Tübingen, West Germany)
Strahlentherapie 137:564-571 (May) 1969

After in vitro and in vivo irradiation of erythrocytes, resistance of hemoglobin against acetylphenylhydrazine is lowered, and by the Heinz corpuscle formation test, significantly more corpuscles can be observed than in non-irradiated erythrocytes. This enhanced denaturation possibility of the hemoglobin can also be observed in professionally exposed persons, in animals, and after radiation therapy. The formation of corpuscles is mainly observed in erythrocytes where glycolytic enzymatic activity and osmotic resistance is lowered. In old erythrocytes, the protection capabilities to ionizing radiations are reduced.

Large Dose Fractions in Telecobalt Radiotherapy

P. J. Taskinen (Southern Saimaa Central Hosp, Lappeenranta, Finland)
Strahlentherapie 137:522-528 (May) 1969

A few large fractions are more effective than daily fractions in oxic conditions, and during the interval between the fractions more recovery occurs in normal tissue than in tumor tissue. Results of treatment of inoperable lung cancer with doses 8 x 400 rads and later 8 x 430 rads twice weekly or 3 to 4 x 700 rads once weekly are presented. The half-year survival rate for all 55 patients was 59%, for patients with squamous cell carcinoma it was 75%, and for patients with other carcinomas, 48%. One-year survival rates were 48%, 60%, and 9% respectively. The median survival for squamous cell carcinomas was 13.5 months, for small cell carcinomas 4.5 months, and for others 6.0 months.

TUBERCULOSIS  ABSTRACTS

Sponsored by Arkansas Tuberculosis and Respiratory Disease Association

SURVIVAL OF ACUTE RESPIRATORY FAILURE

A study was made of 239 episodes of acute respiratory failure in 146 patients with chronic respiratory insufficiency. Twenty per cent of the patients survived at least 30 months. Survival rates were lowest for patients with diffuse infiltrative disease.

A study was undertaken to ascertain the survival time of chronic lung disease patients after an episode of acute respiratory failure, and to determine whether clinical and physiological findings correlated with survival.

Accordingly, 146 men treated at the Veterans Administration Hospital, Durham, N. C., for 239 episodes of acute respiratory failure were studied prospectively over a four-year period.

Each patient was classified as belonging to one of six groups on the basis of clinical and roentgenographic characteristics of his disease. The groups and the number of patients and episodes, respectively, in each category were: I, Chronic diffuse infiltrative disease—13, 22; II, Hyperinflated lungs (emphysema) without hypercapnia —33, 43;; III, Hyperinflated lungs with hypercapnia—36, 44; IV, Hyperinflated lungs with hypercapnia and bronchitis—31, 63; V, Chronic bronchitis with hypercapnia but without hyperinflated lungs—20, 33; and VI, obese bronchitis—13, 34.

Calculations were made of vital capacity, forced vital capacity (FVC), forced expiratory volume in 0.5 and in 1.0 second ($FEV_{0.5}$ and FEV_1), maximal inspiratory flow rate (MIFR), maximal expiratory flow rate (MEFR), and maximal midexpiratory flow rate (MMEF).

Measurements were made of arterial blood carbon dioxide and oxygen tensions and pH within 10 minutes of obtaining samples, which often was at the time the patient arrived at the hospital.

RESPIRATOR ASSISTANCE

Pressure-cycled respirators were used to control ventilation in 64 episodes, to assist ventilation in 54, and intermittently to assist it in all other episodes. Patients requiring controlled ventilation had more severe respiratory failure than the others. However, no general conclusions on survival prognosis of the individual patient should be drawn from this. For a few patients with severe bronchitis, the high pressures of a volume-cycled respirator were needed to maintain adequate ventilation.

The 100 patients in groups II, III, and IV had X-ray evidence of emphysema. One-third of these had P_aco_2 below 50 mm Hg while the others had sustained P_aco_2 elevations during respiratory failure.

In age, the patients ranged from 35 to 88 years, with a mean of 61. Mean ages at onset of acute respiratory failure were highest (63 and 64 years, respectively) in groups II and III (emphysema without clinical chronic bronchitis).

Pulmonary emphysema patients without clinical bronchitis (groups II and III) had a mean weight of 120 pounds in contrast to a mean of 169 pounds in those with chronic bronchitis without emphysema (group V). The mean weight of patients with emphysema and bronchitis (group IV) was midway between that of groups II and III and of group V. The obese patients (group VI) had a mean weight of 277 pounds.

The obese patients had been dyspneic for only 4.5 years before the onset of respiratory failure. Patients in all other groups had been dyspneic for from 9.8 to 12.8 years. There was no clear relationship between dyspnea and objective evidence of ventilatory insufficiency.

Although vital capacity was reduced in all patients, the greatest reduction was in those with pulmonary emphysema and hypercapnia. The obese patients had the greatest number of recurrent episodes.

Tryggvi Asmundsson, M.D., and Kaye H. Kilburn, M.D. *Annals of Internal Medicine*, March, 1969.

Of 146 patients, 135 smoked cigarettes. Most had smoked 20 or more cigarettes a day for 20 years. Two patients had smoked a pipe. Only seven had never smoked.

SURIVAL RATES

Patients survived 162 (68 per cent) of the 239 episodes. Eighty-seven survived the initial episode and 81 of these were alive six months later. After two and a half years, the survival rate had fallen to about 20 per cent and remained there for the patients followed for four years. This was in contrast to the expected four-year survival rate of 89 per cent for unselected men of 61 years of age in this country, an indication of the excessive mortality of patients in acute respiratory failure.

Only 15 per cent of the patients with diffuse infiltrative disease survived six months or longer, compared with 30 per cent of those with emphysema without hypercapnia; 39 per cent of those with emphysema and hypercapnia; 23 per cent of those with chronic bronchitis and emphysema; 55 per cent of those with chronic bronchitis; and 69 per cent of the obese-bronchitic group.

Three of the 13 patients with diffuse chronic infiltrative disease had a short, fatal course and had the Hamman-Rich syndrome. The other 10 had a more protracted illness. Survival of the group was uniformly poor after onset of acute respiratory failure.

All patients with pulmonary emphysema had a serious prognosis. The chronic bronchitis patients without emphysema had a significantly better chance of survival than those without significant hypercapnia. The chronic bronchitis patients without emphysema had a significantly better survival than the three groups of patients with emphysema. This would be expected because exacerbations of bronchitis are potentially reversible but the destruction of alveoli in emphysema is permanent.

Several factors may have influenced survival of the obese patients. Their average age was 10 years less than the average age of patients in other groups and pulmonary function impairment was less severe than among the other groups. Obese patients who did not regain lost weight had no recurrence of respiratory failure.

Preservation of airflow and vital capacity correlated with survival and, conversely, airway obstruction as measured by decreased MMEF rates correlated with poor long-term survival. Severe impairment of gas exchange suggested a poor prognosis after an episode of respiratory failure.

Anemia and, to a lesser degree, edema, were also predictive of poor survival. Loss of hemoglobin reduces the oxygen-carrying capacity of the blood and low arterial oxygen tension is therefore less well tolerated. Edematous patients had a shorter survival after the initial episode than the nonedematous patients, but the difference was not statistically significant.

Patients who survived for 30 months, appeared to have a death rate comparable to that of the male population of the same age. In this study no factor was identified as common to patients with long survival. Therefore, each patient must be treated as if he were among the 20 per cent who will survive 30 months.

Gastrin Secretion and Chronic Hyperparathyroidism

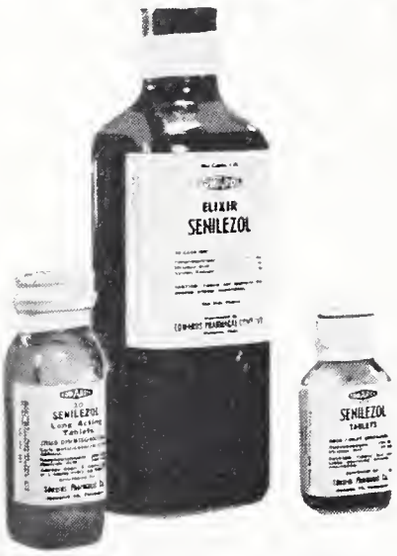
M. Patterson *et al.* (Univ of Texas Medical Branch, Galveston)

Arch Surg 99:9-14 (July) 1969

Thirteen patients with well-documented hyperparathyroidism were studied with a six-hour nocturnal basal gastric secretion followed by a six-hour medical vagotomy secretion. In eight patients, secretions were restudied after removal of the adenoma. Similarly, eight patients with peptic ulcer were studied before and after parathyroid hormone. Only four of the hyperparathyroid patients were hypersecretors; in seven of the eight, basal secretions were lower after surgery. The mean reduction in basal gastric secretion was 56% ($P < .05$) or 15.4 mEq HCl. Similarly, the response to medical vagotomy was more marked in the postoperative group. The mean reduction in secretion was 50% ($P < .05$) or 2.0 mEq. The responses in the parathyroid hormone-injected group were erratic and not statistically significant.

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or

Charles W. Neville, Jr., M.D.

Assistant Professor of Psychiatry and Medical Director

Area Code 704—254-3201

November, 1969

THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 66 No. 6

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THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

PUBLISHED MONTHLY UNDER DIRECTION OF COUNCIL

VOLUME 66 • NOVEMBER, 1969 • NUMBER 6

Facts About Medical Silicone In Dermo-Facial Defects

D. Bluford Stough, III, M.D.*

Reports from physicians using the silicone known as "Dow Corning 360 Medical Fluid" under controlled investigative procedure indicate that it is on the threshold of acceptance as a useful adjunct in the correction of certain dermal defects.

This paper considers only its use in treatment of dermo-facial defects.

What It Is

"Dow Corning 360 Medical Fluid," previously known as "200 Fluid," is a pure unadulterated medical grade synthesized liquid silicone compound with a viscosity of 350 centistokes.[1] It can be injected under minimal pressure with readily available syringes and it is relatively inexpensive. This "360" silicone is not to be confused with the medical silicone developed by Sakurai in 1946 that contained additives which occasionally resulted in adverse effects.[2,3,4,5,6]

Results

Unlike other liquid silicones, which vulcanize soon after injection into the tissues, this "360 Fluid" retains its fluidity. This is its major characteristic. Desirable results from its use in dermo-facial conditions are two-fold:

1. Consistency of a natural contour compatible with the normal adjacent tissue for a period of seven years, or longer.[3,7]

2. Absence of carcinogenicity, granuloma, tumor, sarcoma, allergic or neoplastic reactions. There have been no documented or substantiated evidence of such complications following injections in either humans or animals. The few degenerative or inflammatory effects encountered have been only transitory.[4,7,8,9,10,11,12,13,14]

Those experienced with the "360 Fluid" generally agree that the best results have been in alleviation of deep vertical "frown furrows" on the glabella, depressed planes in the contour of the face, and the nasolabial folds. Some less satisfactory results have been obtained in minimizing forehead horizontal "frown furrows," "laugh wrinkles," or "crow's feet," around the eyes. Good results have been obtained in treating scars caused by acne and/or excoriation when not deep seated. The "ice pick" type scar which is deep and surrounded by strong adhesions shows no benefit whatever. Injection of

Figure 1



A. Patient before silicone injections into glabella and forehead.



B. Patient after silicone injections.

* Hot Springs National Park, Arkansas.

medical silicone with appropriate viscosity can elevate such depressions as skin grafts of the facial region, but will have no effect on normal pores, nor on any of the surface characteristics. There is no unnatural sensation or sensitivity to the touch in areas of treatment.[3, 13]

Important contraindications to its use include:

1. Fibrocystic lesions of the face, such as that seen with severe cystic acne and scar formation.
2. The presence of infection or lymph stasis.
3. Previous surgery with resulting fibrosis at the site of treatment.
4. Patient's expectation of a perfect transformation of the face or personality.[15]

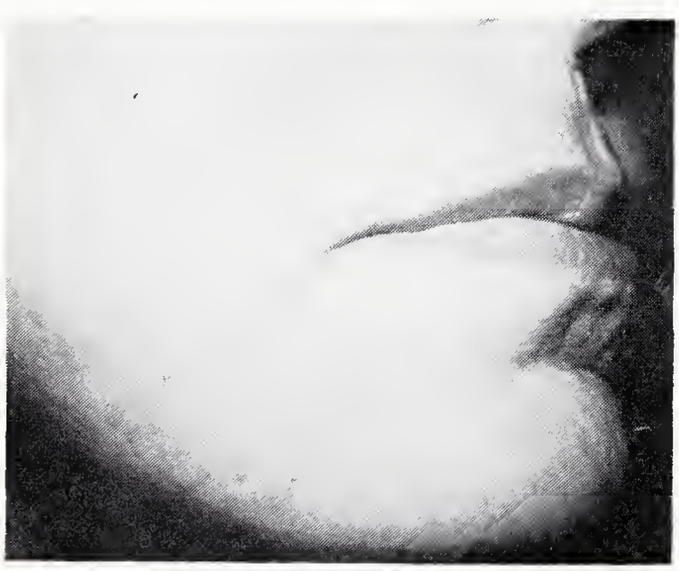
Procedure

The treatment area is cleansed with an antibacterial soap followed by the application of isopropyl alcohol. A plain 25-gauge hypodermic needle using a glass tuberculin syringe is inserted into the subcutaneous tissue. With a slow withdrawal of the needle, no more than .05 cc. is injected at any one site. Injection sites are spaced at least 3 mm. apart when inserting the needle perpendicularly into the skin. The needle may also be inserted along the line of the furrow. Similarly, a small amount of fluid is evenly injected upon withdrawal, this being known as the fanning technique. Some physicians use the horizontal line injection exclusively, while others find the multiple closely-set punctures achieve greater precision. Combination of the two methods, according to the characteristic of the defect, is perhaps most suitable.

Figure 2



A. Patient before injection of "360 Fluid" into nasolabial fold and upper lip lines.



B. Patient after injection of "360 Fluid."

Whichever method is used, it is especially important to inject only a very small amount of fluid in any one area—particularly until experience is acquired in this technique. This caution is to prevent overloading, that is, large loculations of silicone and inadequate dispersion. Microscopic studies indicate that each drop of silicone is fixed with its own fibrous capsule (or pseudomembrane). When these droplets are small enough, there is present an adequate amount of fibrous material to hold them in place and prevent "drifting."[3, 4] No curtailment of activities is necessary since only a slight redness of the area is apparent. An interval of one to two weeks between treatments is preferable.

Local anesthesia is avoided because it distorts the tissue to be treated. Digital pressure and massaging of the areas treated help to smooth out any excess silicone which may cause beading. Use of a warm compress is also helpful. If this is not adequate, however, direct injections of Triamcenelone into the area will generally correct the problem.

Dermabrasion, before or after the silicone injections, is optional; however, "crow's feet" and lines of the upper lip are particularly responsive and the overall appearance may be enhanced.

Another interesting and important usage of medical silicone associated with dermal problems, is the relief attained when this substance is injected into pressure areas which have lost the padding or supporting tissue over bony prominences. This is most helpful in corns, grafts or X-ray scars of the feet.

Summary

Current status of the synthetic silicone known as "Dow Corning 360 Medical Fluid" when used

in treatment of dermal defects indicates:

1. In experienced hands, it is most effective in correcting certain dermo-facial defects, with minimal negative effects.

2. There is now available a medically pure fluid silicone which permits successful treatment of selected cases by a simple office procedure.

3. This relatively new method has progressed from the restricted experimental field and is now worthy of accelerated acceptance.

Figure 3



A. Patient before silicone injections into crow's feet and cheeks.



B. Patient after silicone injections.

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Untoward Reactions To Antibiotic Therapy

Bruce Webster, M.D.*

The widespread use of antimicrobial agents may have completely resolved many perplexing problems in the field of infectious disease, but it has created many new and even more perplexing ones. Among these, are the various untoward effects which have been increasing steadily. Some are directly toxic, some are allergic, and others are related to the biologic activities of the chemotherapeutic agents. The repeated administration of single or multiple agents to ever increasing numbers of people, who are conditioned to show various manifestations of hypersensitivity, when exposed to these drugs, is a major factor.

Adverse reactions to antimicrobial agents consist, in general, of three different categories:

1. Toxic effects related to chemical changes in tissue cells.

2. Sensitivity reaction produced by antigen-antibody reaction.

3. Biologic effects produced by alterations in the bacterial flora of the body.

Patients vary in their susceptibility to these, because of congenitally determined differences in enzymes and protein makeup, differences in immunologic reactivity, differences in environment, or because of the effects of disease. Some antibiotics are capable of producing almost invariable damage to certain tissues, if given long enough, in sufficient dosage; whereas others produce disturbances in only occasional patients. Almost any organ in the body may be involved, indicating that the metabolic processes affected by these agents are represented to a varying degree in the cells of the host. In many instances, little is known of the specific mechanisms involved.

The principal of microbial therapy is that of selective toxicity, in that one hopes to employ an agent that will be toxic to the organism, destroying the infection, without damaging the cells of the host. The mechanisms involved can be divided into three main categories:

1. Pharmacologic. These are the so-called toxic reactions in which the drug damages the cells by producing some chemical effect on the surface or in the interior.

2. Allergic types of reactions, believed to depend on antibody combinations which may attack certain cells selectively.

3. Biologic mechanisms are brought into play when the antimicrobial agent interferes with the normal bacterial flora of the body, either leading to local chemical effects or actual invasion of the tissue and a super infection.

Penicillin

Since penicillin is one of the oldest and still most widely used antibiotics, it might be wise to consider the reactions to this drug separately. Further, through the activities of the World Health Organization, we have a more exact knowledge of penicillin reactions than we do of other antibiotics. World production of penicillin now surpasses many hundreds of tons. While the toxicity of penicillin is insignificant, its antigenic sensitizing potential is considerable. Its most important side effects are of an allergic, and in particular, anaphylactic nature. These fall into two groups:

A. The dare life-threatening reactions, most serious of which are anaphylactic reactions, and conditions such as severe exfoliative dermatitis, serious super and cross infections, and other potentially dangerous conditions such as renal damage.

B. The much more frequent nonserious and mild eczematous and urticarial reactions and the ordinary microbiogenic sequelae such as transitory gastrointestinal reactions.

The World Health Organization has estimated that the rate of fatal anaphylactic reactions following penicillin is slightly more than one per million injections. The incidence of nonfatal anaphylactic reactions is probably ten times that figure, or ten per million injections.

While penicillin is responsible for most of the total anaphylactic reactions caused by all antibiotics, it is further estimated that this drug also causes almost all of the severe angioneurotic edemas which occur in 1/10 of the reactions to all antibiotics. A mortality of 13% is estimated to be associated with severe angioneurotic edema.

The *known* total deaths from penicillin in connection with all syndromes and types of reactions are estimated by WHO to be from 90 to

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115 yearly in the world. There are undoubtedly more.

As would be expected, the rate of reaction is closely related to usage. In the past, WHO assisted antitreponematoses campaigns in rural undeveloped areas. Many millions of people had their first dose of penicillin during these Endemic Treponematoses campaigns, and reactions were extremely rare. On the other hand, in countries where usage is high, as in Japan, the reaction rate is correspondingly high. It is important to realize that sensitivity can be produced by penicillin contaminated milk, the use of penicillin as a preservative in virus vaccines, and penicillin contaminated syringes in physicians' offices.

Prevention of Penicillin Reactions

The discovery of new antibiotics has led to the supplanting of penicillin in some branches of medicine. Generally, however, it has remained the drug of choice throughout the world. As far as the treponematoses are concerned, no remedy can so far replace it. Safe, practical, and objective methods to disclose sensitivity before penicillin administration are still not available.

Voss, Redmond, and Levine evaluated 80 patients with a past history of penicillin allergy, who required penicillin therapy. These were tested with several objective immunologic tests for the possibility of an allergic reaction to penicillin. All 68 patients with negative immediate skin tests to the major and minor penicillin skin test reagents tolerated penicillin without immediate or accelerated allergic reactions. Patients with positive skin tests had a high incidence of allergic reactions. Titre and antibody class [IgG or IgM] of hemagglutinating penicillin antibodies was not useful in predicting immediate allergic reactions, but IgG Titres were useful in predicting accelerated allergic reactions. Levine has repeatedly made the statement that "negative skin tests for benzyl-penicilloyl-specific and minor-determinant-specific skin-sensitizing antibodies appear to rule out the possibility of an immediate or accelerated allergic reaction." This has been disputed by many other observers. It would appear that, whereas work along this line is highly promising, it is still open to question.

In the absence of an abstract objective method, precise history aimed at disclosure of previous penicillin reactions, or evidences of an allergic diathesis is obviously imperative for the prevention of reactions. Surveys show that if patients are carefully questioned, almost 50% have a history of previous penicillin treatment and 5% disclose side effects associated with penicillin administration. These details should be routinely introduced into, and clearly indicated on the medical record of the patient. The possible preventive function of antihistaminics given concurrently with penicillin is of great interest. Experimental and clinical experience is not, however, unanimous as to their usefulness. There is evidence that when given before, with, or immediately after penicillin, they may, to some extent, suppress or delay, allergic symptoms, and the danger of a fatal shock may be mitigated.

Time will not permit detailed discussion of the treatment of penicillin reactions. Repeated injections of adrenalin are the sheet anchor. Antihistaminics and steroids are still of great assistance in the long term management. An emergency kit consisting of suitable antishock drugs and portable oxygen should be freely available to everyone administering penicillin.

The outlook for a positive treatment of penicillin reactions is somewhat improved by the use of Penicillinase.

Perhaps the simplest way of classifying multiple reactions of the remaining long list of antibiotics in common use, is by their anatomic location.

Cutaneous Manifestation

Most of these are the result of sensitization and are frequently accompanied by fever and itching. They may occur during therapy or soon after. Local and inflammatory-like reactions may occur at the site of injection. They may progress to severe exfoliative dermatitis. The management of these is the discontinuance of the drug and the promotion of its elimination. The antihistaminic drugs are of great benefit. ATCH and Cortisone are sometimes lifesavers.

Oral Lesions

The broad spectrum antibiotics notoriously produce these lesions. They may be ulcerative or manifest themselves as a generalized stomatitis. Symptoms are dryness, burning, soreness and itching of the mouth and tongue. The mucous membranes may be red and inflamed. The black hairy tongue or the brown-coated tongue has been attributed to the overgrowth of yeast-like organisms. Antibiotics in the form of

troches seem to produce oral lesions much more often. In one study, 18% of the patients receiving troches therapy developed stomatitis. The discontinuance of the drug and the use of Mysteclin relieves such a condition.

Drug fever should be constantly kept in mind, particularly with the sulfandamides and the broad spectrum antibiotics. Periarteritis Nodosa and disseminated Lupus have been recognized as reactions to hypersensitivity, and in some cases to the use of antimicrobial agents.

Gastrointestinal and Hepatic Complications

Disturbances in the function of the digestive tract are seen most frequently after the use of broad spectrum antibiotics. These are due to direct irritating action of the agents in the bowel. Nausea, vomiting or diarrhea occurs in approximately 6% of patients treated with Tetracycline. Reduction in the dosage together with the administration of the antibiotic with milk or food may lower the incidence. Serious, however, are the severe diarrheas. These tend to occur, particularly after the use of Tetracycline. Some have been associated with hemolytic strains of Staphylococcus-Aureus. They may represent acute Staphylococcus enteritis. Acute colitis, either ulcerative or membranous may occur. Acute monilia stomatitis, and pharyngitis have been mentioned above and may extend down to the lower region of the gastrointestinal tract. Yellow atrophy of the liver has been described.

Urinary Tract Infections

Sulfanilamides may lead to the production of hemateuria and other urinary tract problems. A serious form of this is the obstruction of the urinary flow produced by massive crystallization and stone formation. Acute glomerular lesions and a lower nephron syndrome may occur. Streptomycin also produces renal difficulties, particularly when the urine is acid. The appearance of albuminuria, with increased numbers of casts is an indication to stop the drug. Broad spectrum antibiotics, in general, have been free of harmful effects on the kidneys. On the other hand, the less commonly used agents such as polymixin, bacitracin, and neomycin have a primary toxicity for the kidney.

Effects on the Nervous System

Damage to the eighth cranial nerve, namely the vestibular branch, occurs most often with Streptomycin and the frequency and severity of the resulting disturbances are proportional to the dosage given. Tinnitis and vertigo have occurred in as high as 12.5% of Streptomycin treated patients. Peripheral neuritis has followed the treatment with broad spectrum antibiotics. The exact mechanism of its production is not known.

The Effects on Blood and Blood Forming Organs

Acute hemolytic anemia is one of the early and unpredictable complications of treatment with Sulfanilamides. This was sometimes rapidly fatal and has been assumed to be a specific toxic effect of the drug in a particularly susceptible person. Eosinophilia may occur late in the treatment with many antibiotics. But in the absence of skin lesions or other untoward effects, it is difficult to determine whether the eosinophilia is a sensitivity reaction to the drug or part of the recovery action for which the drug was used. The most serious type of hemolytic reaction, however, is the development of aplastic or hypoplastic anemia. This has recently been very much in the news and has occurred mainly in patients receiving prolonged or repeated dosage of Chloramphemicol, not necessarily large doses. Isolated cases have been reported from other antibiotics. The bone marrow in these cases shows hypoplasia of all of the marrow elements and the peripheral blood demonstrates the production of all of the myeloid elements.

A variety of antibiotics are considered to be responsible for various changes in the blood clotting mechanism. The general feeling appears to be that this is not a serious complication.

The Jarisch-Herxheimer reaction which occurs after the administration of an antibiotic in primary or secondary syphilis is one of great interest. This is not in a true sense a drug reaction.

Bacterial Effects and Their Consequences

The changes in bacterial flora and the new infections that may occur during or after the administration of these agents is one of the serious untoward reactions. Normal bacterial flora in the throat, bowel, or female genitalia is altered in such a fashion that one or two organisms, insensitive to the drug that is being used, become predominant. The organisms which have been observed to increase more infrequently during therapy are proteus vulgaris pseudomonis, staphylococcus aureus, candida, and monilia albicans.

Perhaps potentially the most serious complications of the widespread use of antibiotics is the

emergence and increasing prevalency of organisms that are resistant to most, or all of the agents that have been so used. This has been most clearly demonstrated with the staphylococcus and the gonococcus. That this is the result of the indiscriminant and widespread use of antibiotics is perhaps best demonstrated in the present dilemma in the Far East with the gonococcus. The fact that harmful effects may follow the use of these drugs should not discourage the physician from using them whenever they are definitely indicated. He should, however, be hesitant to employ them in cases in which the indications for their use are either entirely absent or only slightly suggestive.

Summary

The therapy of infectious diseases has been revolutionized since the introduction of sulfanilamide therapy over 30 years ago. The life saving effects in such diseases as pneumococcus penumonia, meningococcic meningitis, typhoid fever, and scrub typhus are nothing short of miraculous to those of us who knew these diseases in the pre-antibiotic days. The reduction of the period of treatment of syphilis from two years or more to one week is a dramatic example of the saving in time and taxpayers' money. Countless other example can be cited. However, this revolution in therapy has brought with it its problems. Those connected with drug reactions, although important and potentially dangerous can be handled by caution on the part of the physician and by research pharmacologists, in attempting to remove the toxic elements from these agents. The emergence of resistant strains of bacteria is a more serious complication. Resistance of the staphylococcus, the gonococcus, the meningococcus, and the parasites of malaria create a serious threat to our future welfare. Fortunately, investigators throughout the world are fully cognizant of these crises and heroic efforts are under way to meet them. It is perhaps difficult to evaluate, at the present time, whether the investigators or the organisms are winning the race.

Effective Plasma Volume in Cirrhosis With Ascites

F. L. Lieberman, S. Ito, and T. B. Reynolds (John Wesley County Hosp, Los Angeles)
J Clin Invest 48:975-981 (June) 1969

In the present study the concept of a reduced effective plasma volume in cirrhosis is challenged by two lines of evidence, even though effective plasma volume itself could not be measured. Total plasma volume failed to rise in ten patients with the spontaneous loss of ascites, the appearance of sodium in the urine, and a rise in glomerular filtration rate (GFR). Reduction of GFR could not be prevented in five patients with cirrhosis and ascites while total plasma volume was prevented from falling with albumin infusions during drug-induced diuresis. Reduction of GFR during drug-induced diuresis in 15 patients with cirrhosis and ascites was completely reversed with saline infusion despite continued diuresis with the identical drugs, excluding drug nephrotoxicity.

CORRECTION

A typographical error was discovered in the article entitled "Determinants of Digitalis Dosage" which appeared in the September issue of the Journal. On pages 124 and 125 the graphs for figures 3a and 3b were transposed. The graph appearing with figure 3a should have been with 3b and the graph with 3b should have been with 3a. Our apologies to the author.



SURGERY at the UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE*

*Under the direction of Gilbert Campbell, M.D., Professor of Surgery.

Extraocular Traumatic Luxation of the Lens*

Calvin Hanna, F. T. Fraunfelder and Yum Y. King

A severe blow to the eye is followed by a rapid increase in intraocular pressure. This wave of pressure pushes the aqueous fluid and iris against the lens. The lens may completely tear loose from the zonules and the freed lens may be moved (luxated) to various places in the eye. Occasionally the globe is ruptured and the lens may be completely luxated and come to rest outside the eye, in Tenon's space or in the subconjunctival space.[1] An unusual case is reported here in which the lens was luxated outside of the globe and came to rest in the subconjunctival space. This is the first reported case with pathologic studies of an extraocular luxated lens.

Case Report

A 60-year-old Negro male while working was accidentally hit in the right eye with a wrench. He noted sudden loss of vision and marked pain. Because of pain and difficulty in closing his right eye, he was referred to the University of Arkansas Medical Center for evaluation one month post injury. On admission visual acuity was light perception in the right eye and 20/25 in the left eye with correction. Examination of the right eye revealed a mass under the conjunctiva superior temporally the size and shape of a lens (Fig. 1). The upper lid closed with difficulty over this mass and would frequently catch on its upper border. The eye was markedly injected and irritated. Extraocular muscle movements were normal. Biomicroscope examination of the right eye revealed the anterior chamber filled with bright red blood and old clots, and the red fundus reflex could not be observed.



Figure 1

Photograph showing position of luxated lens beneath the conjunctiva of the right eye just prior to surgery.

Applanation tonometry pressure readings were right eye 26mmHg. and left eye 16mmHg. Examination of left eye was negative.

The patient was placed on bed rest, topical 1% atropine sulfate four times a day, 0.1% dexamethasone (Maxidex) every four hours, and oral acetazolamide 250mg. four times a day. After four days of therapy there was no change. Since there was difficulty in closing the right lid under local anesthesia, the conjunctiva was incised and the lens easily removed. Postoperative course was uneventful and the patient was discharged on the 7th postoperative day. During the five months postoperative follow-up examinations the best visual acuity of the right eye remained at 20/400. This eye was not noticeably inflamed, the anterior chamber was still hazy, and the anterior vitreous face membrane was present with possible lens capsule or blood clot remnants. Applanation pressures on near maximum medical therapy (epinephrine, pilo-

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carpine, acetazolamide) remained in the high 20's mmHg, and there is marked haze and debris in the vitreous.

The removed right lens was flattened, somewhat irregular at the equator, stained brown and opaque. After fixing in formalin it was cut through the sagittal plane of the lens into 4 equal quadrants. Each piece was treated with alcohol, propylene oxide, embedded in Araldite plastic and sectioned 0.1 to 2 microns thick using a glass knife and stained with alkaline toluidine blue. The anterior capsule and remnants of the posterior capsule were the thickness of a normal lens of this age. Occasionally melanine granules, presumably from the iris, were present on the exterior side of the capsule. Apparently the lens was flattened somewhat off the center axis of the lens. In two adjacent quadrants the subcapsular epithelial cells extended over most of the surface of the lens and was folded at the equator (Fig. 2). In the other two quadrants the

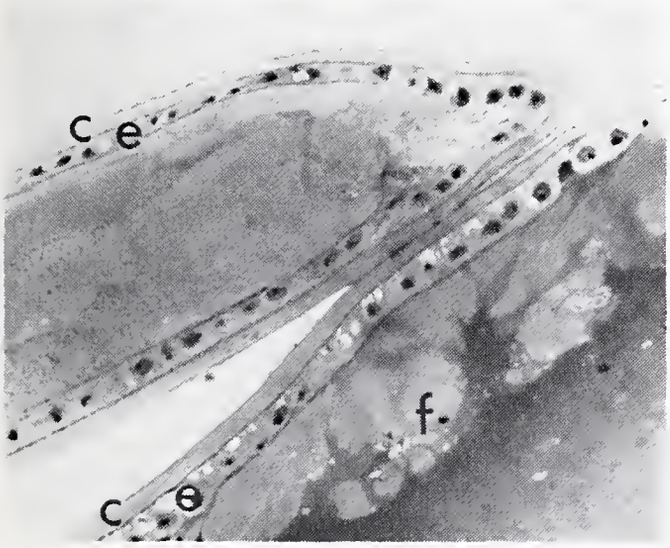


Figure 2

Photomicrograph of equatorial region of luxated lens. Upper left shows the deeply folded lens equatorial region. The capsule (c) is intact and some epithelial cells (e) show non-staining spaces possibly caused by a mechanical pull on the capsule during lens extraction. In the lower left quadrant are lightly staining and vaculated developing fibers (f) in the cortex region above more intact cortex fibers. (Magnification 300 times)

epithelial cells and capsule were absent except over the central anterior surface of the lens and the posterior capsule was absent or retained in fragments. Where the capsule was absent the cortex region was partly disintegrated and intermixed with red blood cells. There was an absence of cell types other than Erythrocytes and lens cells. The nucleus of the lens and its fibers were mostly intact. Under the capsule the epithelial cells were intact while some cells were apparently mechanically pulled loose (Fig. 3). The cortex fibers were greatly swollen (Fig. 3) however, in several areas the fibers of the cortex region was near normal in appearance.

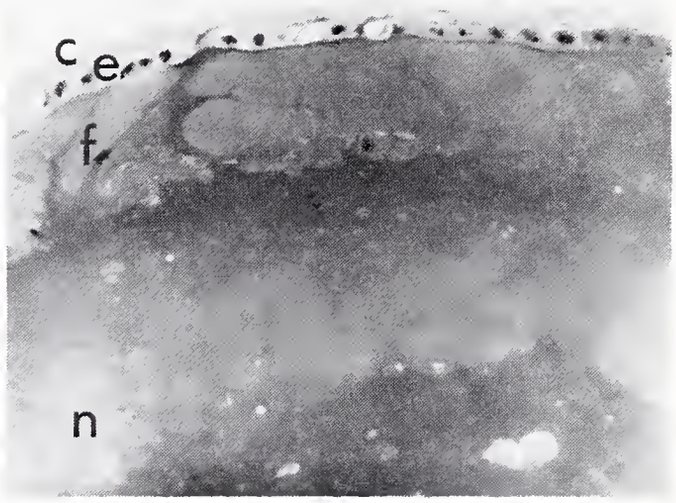


Figure 3

Photomicrograph of equatorial region showing the epithelium (e), capsule (c) and developing fibers (f) above and a band of cortex and nuclear (n) fibers below. In all areas and especially in the developing cortex region vaculation of the fibers (f) is present as evidenced by light or no staining regions. (Magnification 300 times)

We have seen two additional cases of traumatic ocular injuries with complete loss of the lens. Follow-up of these cases are incomplete, but both have second degree glaucoma on maximal medical therapy. Few articles have been published on this subject and we are interested in increasing our series and welcome any case material you may have. The pathologic studies are of interest since only erythrocytes were found among the degenerating lens fibers, although lens proteins are autoantigenic[2] there was no indication of an inflammatory process.

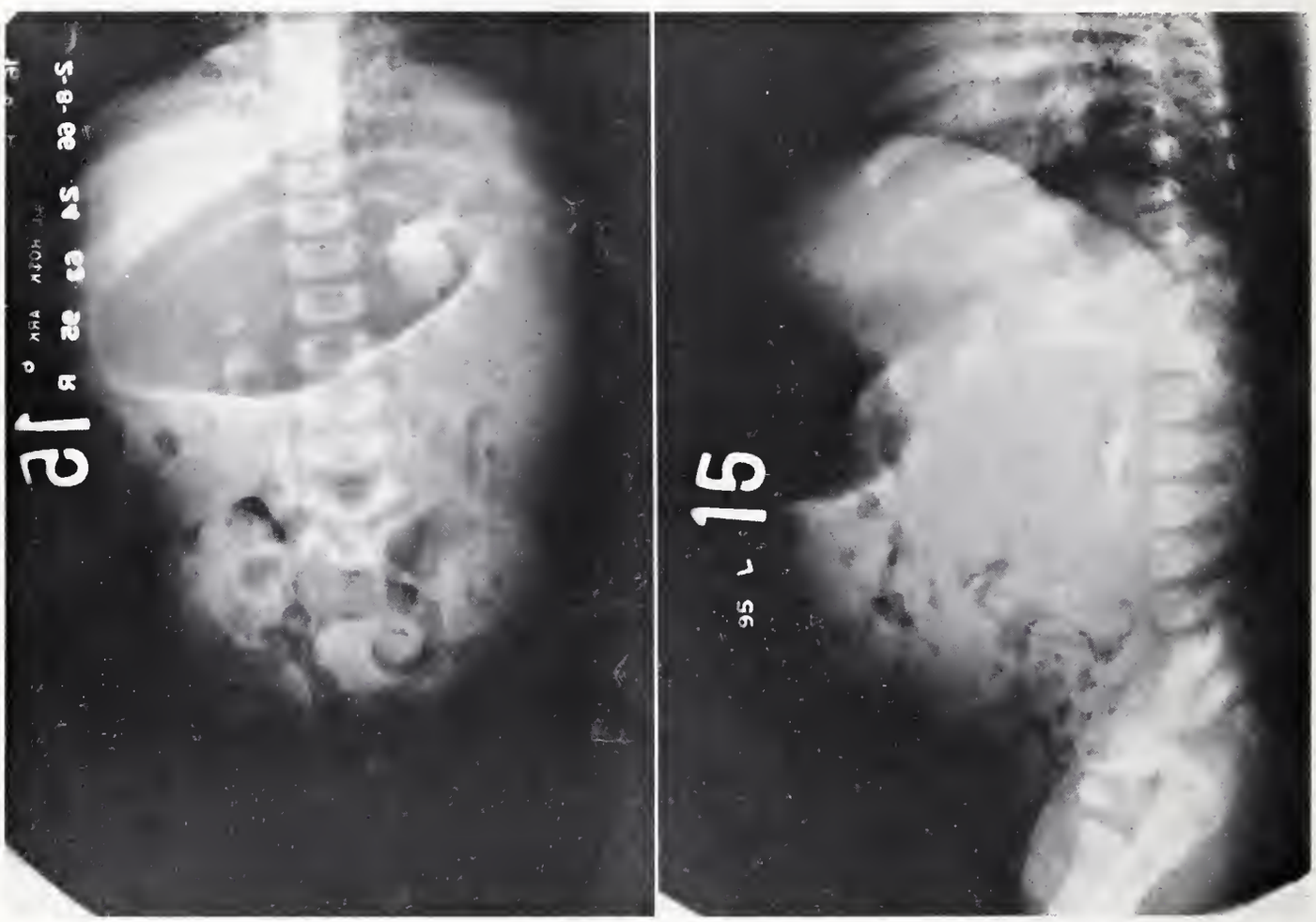
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RADIOLOGY CASE OF THE MONTH

Prepared by the
Department of Radiology, University of Arkansas
School of Medicine, Little Rock

SEE ANSWER ON PAGE 225

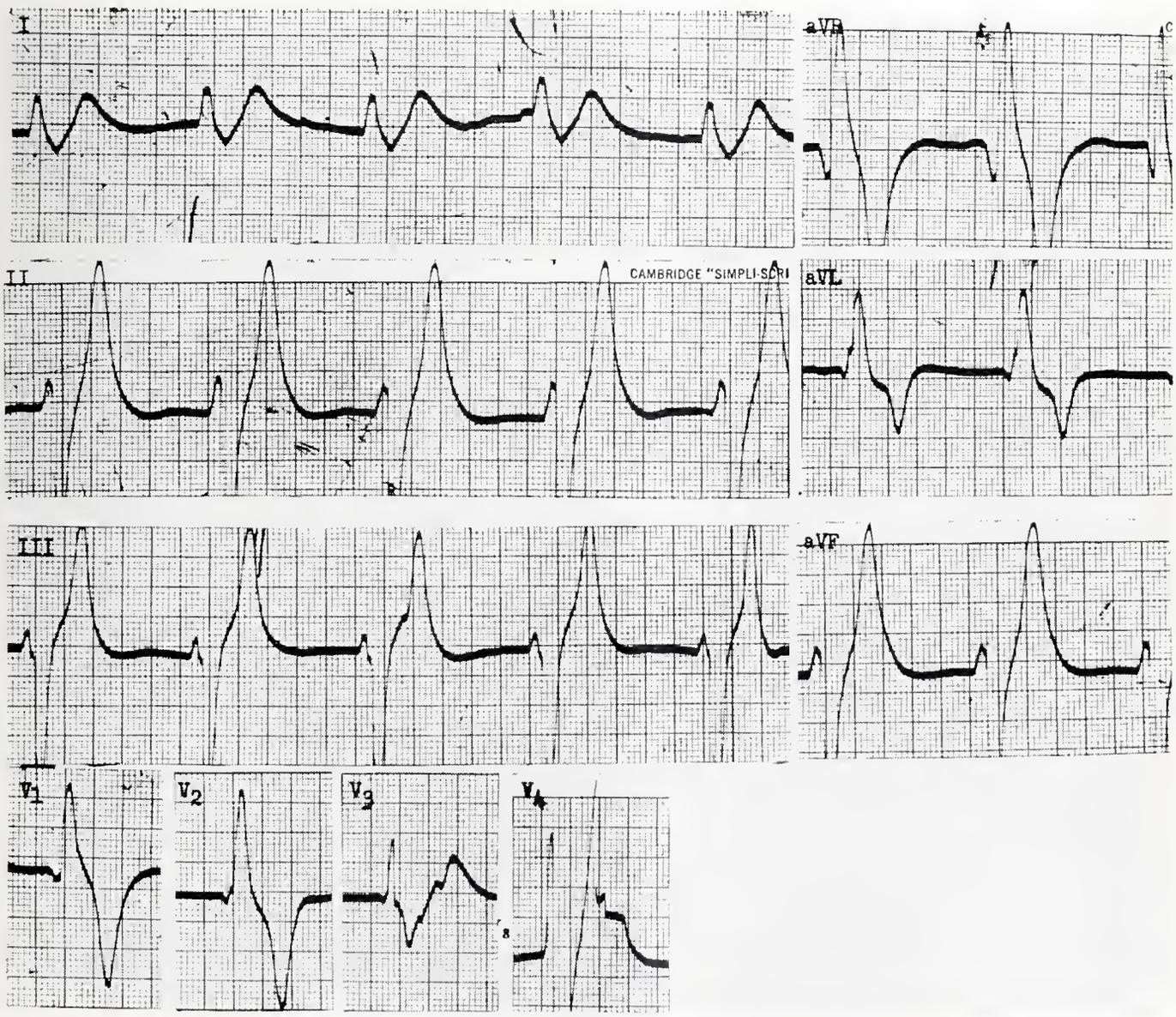


HISTORY: 18-month-old admitted with left sided abdominal mass.

ELECTROCARDIOGRAM OF THE MONTH

AGE: 43 SEX: Female BUILD: Stocky BLOOD PRESSURE: 220/140
CARDIAC DIAGNOSIS: Hypertensive cardiovascular disease.
OTHER DIAGNOSES: Arteriolar nephrosclerosis.
MEDICATION: Digitalis; amount not known.
HISTORY: None stated.

SEE ANSWER ON PAGE 225



The Department of Medicine, University of Arkansas Medical Center
James S. Taylor, M.D., Professor of Medicine



The Arkansas State Health Department What It Is — What It Does

Prior to 1913 the State was plagued by widespread epidemics of smallpox, typhoid fever, yellow fever, malaria, dysentery, and many other communicable and infectious diseases. These controllable diseases caused many thousands of unnecessary deaths annually; some were transmitted from person to person, some from insects to man, and others were milk, food, or water borne. This alarming health condition caused great concern among the physicians of the State. They realized that some authoritative body was needed with regulatory and quarantine powers to assist in the protection of the public health of the State.

Through the efforts of the physicians of the State and interested citizens, the General Assembly of 1913 passed Act 96, the basic public health law. This law provided for a State Board of Health comprised of one physician from each Congressional District. (The Board presently is comprised of six physicians, one from each Congressional District as well as one physician, one dentist, one pharmacist, one nurse, and one engineer, appointed from the State at large.) The Board was authorized to employ a secretary to serve also as State Health Officer, a general secretary, and a few clerical workers for the operation of the Bureau of Vital Statistics on a State-wide level. The Act also provided for the appointment of a county health officer in each of the seventy-five counties and for the appointment of a health officer for cities of certain classes.

The basic law specifically outlined certain functions and duties for the State Board of Health. The primary function and duty is to exercise general supervision and control of all matters pertaining to the health of the citizens of this State. The Board was to make a study of the cause and prevention of infectious, contagious, and communicable diseases and to have direction and control of all matters of quarantine regulations and enforcement. It was clearly the function and duty of the Board to prevent the entrance of such diseases from all points without the State, to have direction and control over all sanitary and quarantine measures for dealing with such diseases within the State, and to suppress the same and prevent their spread. It was also the duty of the Board to promulgate all reasonable rules and regulations necessary to the performance of the above stated duties and functions.

The Act charged the Board with the responsibility of operating a Bureau of Vital Statistics, of providing an adequate system for the registration of births and deaths, and of issuing (certified) copies of birth and death certificates upon request. The Bureau is also responsible for the recording of marriages, divorces, and adoptions occurring in the State.

The original Act also established the State Hygienic Laboratory and stated that all investigations conducted in the Laboratory were to be free to the people of the State. (The Act has since been amended to permit charges for some services.)

Since 1913 there have been many legislative acts dealing directly with the public's health passed by the General Assembly. These have required the establishment of additional bureaus and divisions in specialized fields of public health which comprise the State Health Department as it now exists and functions. The objective of the public health program in Arkansas

is to protect the health of its citizens. To do this it is necessary, in addition to existing laws requiring it, to maintain a central organization of bureaus and divisions rendering direct services throughout the State and a system of district, county, and city health departments also rendering local health services directly.

The following is a Directory of Health Services of the State Health Department:

Bureau of Vital Statistics

Registers birth and death and fetal death certificates; makes amendments on birth and death certificates on the presentation of satisfactory documentary evidence; effects replaced birth certificates following legal adoption and legitimation; and registers delayed births for persons whose births were not recorded. The Bureau also maintains a record of marriages and divorces.

Bureau of Dental Health

Provides consultation in dental programs under way in other agencies. Encourages the fluoridation of public water supplies as a preventative dentistry measure. Continuing education is provided for the dentists of the State; portable dental equipment is provided to treat certain population groups. Dental education programs are carried out in various school systems and civic groups.

Bureau of Local Health Service

Division of Communicable Disease Control

Is responsible for knowing what communicable diseases occur in Arkansas, the frequency of their occurrence, and their distribution. This knowledge enables them to assist in control and possible eradication of a disease. Offers consultation and advice to local health departments and physicians in private practice on the diagnosis, treatment, and control of communicable disease. The Division also conducts frequent epidemiological studies.

Division of Veterinary Public Health and Health Mobilization

Provides information and consultation to physicians, veterinarians, local health units, and the public, relative to animal diseases transmissible to man.

Health Mobilization Planning provides Medical Self-Help Training courses and courses (to special groups) in Cardio-pulmonary Resuscitation.

In addition, Health Mobilization Planning administers the United States Public Health Service Emergency Medical Stockpile Program, which includes the Packaged Disaster Hospitals, Hospital Reserve Disaster Inventory, and Emergency Health Planning.

Division of Meat Inspection

Provides inspectional services, licensing, or exemption of licensing of establishments; regulates advertising, transportation, marking, labeling and record keeping to insure that clean wholesome meat and meat products are produced in slaughterhouses, meat packing plants, and frozen food lockers. Reviews plans and specifications for the above establishments.

Division of Tuberculosis Control

Covers all aspects of tuberculosis control, including case finding and disease prevention in schools and in the community. Treatment is available to patients through chest clinics. Provides consultative services to physicians in private practice, hospitals, and institutions. Provides tuberculosis diagnostic services to all school personnel.

Division of Maternal and Child Health

Maternity Care

Supervises maternity clinics, conducted by local physicians, and family planning clinics.

Midwife Control

Sets standards for obtaining permits to practice midwifery in Arkansas.

Child Health

Provides supervision for premature infant care, well-child clinics, school health programs, and hearing and vision screening.

Nutrition Services

Provides nutrition consultation to local health units. Provides services upon request, to all official and voluntary health agencies, institutions including schools, colleges, hospitals, and child care institutions and miscellaneous community groups; and any individual citizen requesting help with normal or therapeutic nutrition.

Mental Retardation Services

Provides medical, psychological, and social evaluation of children suspected of mental retardation.

Speech and Hearing Services

Provides recheck, evaluation, and therapy for children with speech and hearing problems.

Division of Venereal Disease Control

Carries out continuous surveillance of venereal diseases in an effort to bring all cases under

appropriate medical care. Routinely visits private physicians and laboratories to enlist their cooperation in epidemiological procedures to attain eradication of venereal diseases.

Division of Chronic Disease Control

Provides care services to the sick at home upon written orders of the patient's personal physician. Provides diabetes diagnostic screening in high risk groups. Provides throat swab kits to physicians for screening streptococcal throat infections.

Division of Public Health Nursing

Provides nursing service consultation, planning and supervision of local staff nurses as they furnish nursing service at the community level to implement the programs related to other Divisions of the Bureau of Local Health Services. Recruits, assigns, and trains new nursing personnel.

Division of Safety

Provides minimum standards for training, licensing, and related requirements for ambulance and rescue vehicles and personnel; vehicle and equipment inspection and coordination of emergency care systems.

Division of Radiological Health

Serves as the control laboratory for fluoridation of public water supplies for control of dental caries. Analyzes food, milk, water, and air for chemical and radio chemical properties. Licenses, controls, and approves all uses of radio isotopes, X-ray and fluoroscopic machines.

Division of Heart Disease Control

Assists in the operation of the cardiac clinic at the University of Arkansas Medical Center. Provides educational information on accepted methods of cardiac and vascular disease control. Provides refresher courses for physicians in the diagnostic and treatment procedures for heart and blood vessel diseases.

Division of Hospitals and Nursing Homes

Inspects, approves, and licenses hospitals, infirmaries, and nursing homes. Administers the Hill-Burton Program for hospital and health facilities construction, the Federal aid program for the construction of Community Facilities for the Mentally Retarded, and the Federal aid program for the Construction of Community Mental Health Centers. Certifies medical facilities for participation in the "Medicare" Program. Administers the Arkansas Architectural Barriers Law (Act 122 of 1967).

Division of Public Health Education

Coordinates the procurement, distribution and utilization of health education materials and equipment for local health departments and the State office. Provides publications to local health departments for staff use and distribution or loan to the public. Coordinates health education activities of the State Health Department.

Bureau of Laboratories

Works with physicians, hospitals, and health department personnel in diagnosis of disease and in finding evidence of insanitary conditions and health hazards through laboratory analysis. Makes bacteriologic tests on food, milk, and water. Examines specimens for diagnosis of infectious diseases.

Bureau of Environmental Engineering

Provides consultation services and review of plans for all aspects of man's environment except meat and solid waste.

Division of Plumbing

Licenses plumbers; promotes the adoption of plumbing codes by municipalities; conducts training schools for plumbers; and reviews plans and specifications and makes inspections of certain plumbing installations.

Division of Food and Drug Control

Provides inspection service for school lunch rooms; food storage and food processing plants in areas where there is no local sanitarian. Reviews plans and specifications for all food processing and food service establishments. Does routine food sampling and investigates foodborne disease outbreaks. Reviews proposed labeling and advertising pertaining to foods, drugs, cosmetics, and devices. Checks drug inventories, maintains narcotic drug order records, and investigates problems relative to the abuse of dangerous and addicting drugs.

Division of Dairy Products

Provides inspection services to assure pure unadulterated milk and milk products from farm to doorstep. Provides inspection services for the production, processing, and manufacturing of all dairy products.



EDITORIAL

Oral Contraceptives

Alfred Kahn, Jr., M.D.

The population explosion has resulted in an unprecedented search for birth control measures. Oral contraceptives are certainly among the most widely used methods of preventing pregnancy. Our current tablets are related to natural ovarian hormones. As time has gone by, serious questions as to the safety of ovarian like substances have arisen. There appears to be a definite, although minute, risk of thrombotic disease; there are even reports of basilar artery thrombosis in very young women, and this a virtually unheard of site in the young. Other articles appearing in the literature indicate complications which might tend to limit the use of this family of drugs in certain women.

Bole, Friedlaender, and Smith (The Lancet, Vol. 1, p. 323, Feb. 15, 1969) reported on eight women, 21 years to 29 years, in an article entitled "Rheumatic Symptoms and Serological Abnormalities Induced by Oral Contraceptives." Of the eight patients, one patient reported vascular or musculo-skeletal symptoms prior to ingestion of oral contraceptives; one patient reported synovitis in multiple joints. After the ingestion of oral contraceptives, all patients reported increased symptoms or new symptoms; four had vascular and musculo-skeletal symptoms and four had synovitis; the symptoms diminished or disappeared when the medication was stopped. Raynaud's Phenomena increased with drug ingestion in two cases. There were anti-nuclear antibodies in all cases on the drugs. A positive L.E. Cell Test was present in six of eight patients while on medication; rheumatoid factor appeared in two. Immune globulin Type IgM was increased while Types IgG and IgA were unaffected by oral contraceptives.

"Increased Plasma Triglyceride Levels Induced by Oral Contraceptives" was the subject of an article by Hazzard, Spiger, Bagdade, and Bierman (New England Journal of Medicine, Vol. 280, p. 471, Feb. 27, 1969). Elevated triglycerides have been implicated as a cause of arteriosclerosis. Thus, if the triglycerides are elevated by oral contraceptives, this might be a partial explanation of the incidents of thrombotic disease in young women. These authors studied ten women with a mean age of 25 years. Studies were made prior to and after treatment with ethinyl estradiol and medroxyprogesterone. It was found that triglyceride levels increased in nine out of ten subjects. The mean triglyceride level before treatment was 45 mg.% and after treatment it was 64 mg.%. Basal insulin levels were also elevated. This study did not afford any explanation as to whether this effect was due to increased formation of triglyceride or decreased removal.

Because of reported decreased glucose tolerance in women on oral contraceptives, Yen and Vela studied "Effects of Contraceptive Steroids on Carbohydrate Metabolism" (Journal of Clinical Endocrinology and Metabolism, Vol. 28, p. 1564, Nov., 1968). They used 23 non-obese women with a mean age of 23 years. Twelve subjects received ethinyl estradiol plus dimetherone and eleven received ethinyl estradiol plus ethynodiol diacetate. Glucose tolerance tests using intravenous technique before and after drug treatments were considered by the authors to be essentially unchanged. The plasma insulin level went up markedly. The level of human growth hormone went up 300%. They reported similar changes using oral glucose tolerance test. It is suggested that the elevated human growth hormone level resulted in an increased output of insulin as a compensatory mechanism.

The significance of this work is that our cur-

rent oral contraceptive tablets, based on ovarian hormone-like substances, do cause profound changes in the body's metabolism which in turn may produce actual disabilities. On the other hand, the incidence of serious disorders from these drugs is so low that oral contraceptives should not be withheld as a birth control measure. Admittedly, intrauterine devices have certain advantages over current oral contraceptives, but they, also, have certain disadvantages as discomfort in insertion; they induce histologic changes in the endometrium of some women, and they are not completely fail proof. The future will probably bring either a tablet or an injection that will work without inducing troublesome side effects.

Influence of Physiologic Fluctuations in Plasma Growth Hormone on Glucose Tolerance

R. S. Yalow, S. J. Goldsmith, and S. A. Berson
Diabetes 18:402-408 (June) 1969

In oral glucose tolerance tests (GTT) performed 3, 4, and 6 hours after a previous GTT, 6 hours after a combined protein-glucose tolerance test, or 2½ hours after intravenous insulin, impairment in tolerance could be closely correlated with the magnitude of the growth hormone secretory response in the previous procedure. These observations support the physiologic role of growth hormone in determining glucose tolerance. Impairment in glucose tolerance was generally associated with an augmented integrated plasma insulin response and improvement in glucose tolerance was frequently seen in association with a lesser plasma insulin response. These observations support the view that plasma insulin follows blood glucose but that the rate of glucose disposal is determined by factors other than the level of plasma insulin alone.

Investigation of Relation Between Use of Oral Contraceptives and Thromboembolic Disease

M. P. Vessey and R. Doll (MRC Statistical Research Unit, London)
Brit Med J 2:651-656 (June 14) 1969

Of 84 patients with deep vein thrombosis or pulmonary embolism, 42 (50%) had used oral contraceptives during the month preceding the onset of their illness, while only 23 of the 168 controls (14%) had done so. No evidence was obtained of any appreciable differences in the risk of causing venous thromboembolism between different oral contraceptive formulations, nor between different periods of time after they began to be used. Of 19 patients with cerebral thrombosis, 11 (58%) had been using oral contraceptives, whereas only 3.5 would have been expected from the experience of the controls. In contrast, of 17 patients with coronary thrombosis, only two had been using oral contraceptives, a number in close agreement with that expected (2.1).

MEDICINE IN THE NEWS

THE MONTH IN WASHINGTON

Washington, D. C.—A Food and Drug Administration advisory committee found oral contraceptives to be "safe," but reported that British and U. S. studies had established "an etiologic relation between thromboembolic disorders" and their use.

The Advisory Committee on Obstetrics and Gynecology, making its second report on oral contraceptives, said that their benefits outweighed the risks sufficiently to designate them "safe" within the intent of the federal law.

As for the potential carcinogenity of oral contraceptives, the report said no conclusion could be drawn at this time.

The committee called for intensive research along three lines: 1) possible relationship of hormonal contraceptives and carcinoma of the breast and uterus; 2) determination of the basis and prognosis of metabolic alterations produced by hormonal contraceptives; and 3) development of new methods of contraception.

The committee, in its initial report three years ago, approved of oral contraceptives with reservations. It now said that these reservations appear to have been justified because of the adverse reactions reported in both scientific literature and the general press. But the report concluded:

"When these potential hazards and the value of the drugs are balanced, the committee finds the ratio of benefit to risk sufficiently high to justify the designation safe within the intent of the legislation (Kefauver-Harris Amendments of 1962)."

The report said scientific studies "suggest that the mortality from thromboembolic disorders attributable to the oral contraceptives is about three per 100,000 women per year, adding less than three per cent to the total age-specific mortality in users of these drugs." In a U. S. study, the risk of thromboembolism to a woman using hormonal contraceptives was estimated by indirect methods to be 4.4 times that of a non-user.

The report said there is no evidence that any metabolic alterations induced by the oral contraceptives pose serious health hazards.

The effectiveness of oral contraceptives was found to be significantly higher than for intrauterine devices or trational methods.

* * *

Abandoning a long court fight, the Internal Revenue Service reversed itself and ruled that organizations of physicians authorized under state professional association laws will be treated as corporations for tax purposes.

The IRS announced that it would not appeal to the Supreme Court two recent decisions by U. S. courts of appeal favoring the professional association. In accordance with these court decisions, the IRS said, "Organizations of doctors, lawyers and other professional people organized under state professional association acts will, generally, be treated as corporations for tax purposes."

Forty-two states have such laws which offer tax benefits, including deferment of the tax on pension plan contributions until retirement.

The court controversy over IRS treatment of the professional associations for tax purposes dated back to the early 1950's. It was given a "Kintner" label in 1954 when an appeals court ruled in favor of the professionals in a case brought by Arthur Kintner, M.D., Missoula, Mont.

* * *

The federal government has started a program designed to increase enrollment in the nation's schools of medicine and osteopath by 4,000 over the next four years.

Known as the Physician Augmentation Program, the activity, under the Department of Health, Education and Welfare, supports the addition of 1,000 first year places commencing with the fall term of 1970. These places are in addition to any increase to which the schools have already committed themselves. Total enrollment through this program is expected to be

about 4,000 in the fourth year of operation. The Physician Augmentation Program is authorized under the Health Manpower Act of 1968.

Grants will be awarded on a national competitive basis to those schools of medicine and osteopath that document their intention to institute a major increase in their first-year enrollment and that appear to have the greatest potential for achieving major increases with their own resources as supplemented by funds allocated by the program.

* * *

Robert H. Finch, secretary of Health, Education and Welfare, proposed that state medicaid administrators work more closely with state medical societies on cost control in the federal-state health care program.

He also said that the states should review more claims in efforts to control medicaid costs.

Finch gave his views on controlling medicaid costs in a letter to Sen. Abraham Ribicoff (D., Conn.) who had asked what was being done and what additionally could be done about rising expenditures in the program.

In answer to a question as to what states "could be doing under existing law to control medicaid costs more efficiently," Finch said:

"One answer is to spend more money on the claims review function. For example, there are two states where annual medicaid expenditures are in excess of one hundred million dollars. One employs seven people for its review function, the other employs seventy. The latter state has very effective control over costs and utilization.

"But I am coming to believe that a major factor is the degree to which physicians are involved in the program, not simply as purveyors of medical care but also as watchdogs of costs and guardians of quality. They generate the bulk of medicaid expenditures. They authorize admissions to hospitals and skilled nursing homes and they write prescriptions. The need for genuine physician participation in controlling costs is self-evident. A state medicaid administrator would be well advised to make extensive use of his medical advisory committee and to engineer the plan in detail through the state medical society."

As to what states already are doing, Finch said:

"Some states are using prior authorization of service (emergencies excepted). Some use fee schedules. Some use audit tolerance levels. Some incorporate parameters of medical care into their data processing systems. Some develop client and purveyor profiles. Some use computers to process claims. Others contract the review function to a fiscal agent, e.g., a Blue Cross plan. Some use a medical audit and some have been doing very little."

Ribicoff said in his letter to Finch that he understood "there is very uneven performance of medicaid program review throughout the nation."

Peer review under leadership of state and county medical societies has top priority in the American Medical Association recommendations for controlling costs in both medicaid and medicare. A report of the AMA board of trustees approved by the house of delegates at the 1969 annual convention in New York strongly urged that:

—"Peer review be assigned the highest priority by the state and county medical societies; that where existing mechanisms exist, they be strengthened, and where they do not, they be promptly established.

—"Quick and decisive action be taken, in appropriate fashion, to discipline those few physicians determined after investigation to be abusing medicare and medicaid, either fraudulently or otherwise."

The AMA recommendations for cost control in government health programs also include:

—"The promotion of innovative health service delivery systems for low income communities with emphasis on ambulatory care.

—"Programs by local medical societies to insure preservation of quality health care in the face of cost containment measures."

Law and Medicine Teams to Provide Drug Information

The new pamphlet, "Youth and Drugs," prepared by prosecuting attorney Richard B. Adkisson of Little Rock, 6th Judicial District, has been distributed to the 1,400 doctors who are members of the Arkansas Medical Society, by the society's headquarters located in Fort Smith.

Physicians have been urged to display the information prominently in their waiting rooms so that anyone may gain badly needed information concerning this crucial problem confronting

many uninformed parents, children, and young adults.

Mr. Adkisson gave the following justification for the brochure: "It is the primary duty of my office to prosecute all persons who have violated the law. However, since drug abuse among our youths is in part a result of lack of information, I believe my office can be of service by assuming the role of educating to help prevent drug abuse."

It is well known that the pressures of modern society contribute to the drug abuse problem. So do its material advantages. Among those youngsters and others who do not have to struggle for the essentials of life, some may turn to drugs for excitement. It seems they have learned how to use their minds, but not how to develop and enjoy their senses without artificial stimulation.

Medical authorities make at least one point crystal clear. Drugs are chemicals that act upon the body's own chemistry. Taking them without professional advice or direction can injure vital parts of the body directly. Further, the popular "drugs of abuse" can also lead to drug dependence, either physical, psychological, or both!

Medical Society physicians hope that people will take the time to read this pamphlet in their offices. It is natural for young people to experiment with many things, to question, to examine. But if a youngster is capable of making intelligent decisions based on facts of drug abuse danger, he may well avoid this kind of experimenting. Moreover, if he genuinely appreciates the many valuable attributes of the world around him, he is not likely to think about trading real living for "kicks" now or in the future.

* * *

THINGS TO COME

American Board of Family Practice to Give First Exams

The American Board of Family Practice announces that it will give its *first* examination for certification in various centers throughout the United States. The examination will be over a two-day period on February 28-March 1, 1970. Information regarding the examination and eligibility for the examination can be obtained by writing:

Nicholas J. Pisacano, M.D., Secretary
American Board of Family Practice, Inc.
University of Kentucky Medical Center
Annex No. 2, Room 229
Lexington, Kentucky 40506

ANNOUNCEMENT

The Air Force Reserve Program now is offering young physicians a chance to satisfy their military obligations and still remain in their local communities. Only rarely does the Air Force open the door to what it terms "Non-Prior Service Physicians." The program has been closed for several years but is now open—until December 31, 1969.

To be eligible for a direct commission, a physician must:

A. Be a United States citizen.

B. Be a graduate of an approved school of medicine.

C. Have completed one year of internship and one year practice or residency (two years of internship will also qualify).

D. Be currently engaged in the practice of medicine.

E. Be of the high moral character expected of commissioned officers in the United States Air Force.

F. Be physically qualified for commissioned service as prescribed by Air Force directives.

Within the Fourth Air Force Reserve Region (Texas, Oklahoma, Louisiana, Arkansas, and New Mexico) there are 41 Medical Service Flights, Squadrons and Dispensaries with requirements for all categories of medical personnel. Spaces are available for both prior service and non-prior service physicians. Information can be obtained either from the Central Base Personnel Office at the nearest Air Force Base or from communicating directly to the Office of the Surgeon, Fourth Air Force Reserve Region, Ellington Air Force Base, Texas 77030, telephone area code 713-487-1400, Extension 427 or 428.



OBITUARY

Dr. Edward C. Gresham

Dr. Edward C. Gresham, age 46, of Crossett died September 10, 1969. He was born at Hampton, Arkansas, and had resided in Crossett for the past twenty years.

Dr. Gresham was a graduate of the University of Arkansas School of Medicine, Class of 1946. He was a member of the Ashley County and Arkansas Medical Societies and the American Medical Association. Honorary pallbearers were the members of the Ashley County Medical Society.

Survivors include his widow, Nancy Anderson Gresham, one son, and two daughters.

* * *

Dr. Jesse T. Wood

Dr. Jesse T. Wood of Fountain Hill in Ashley County died September 8, 1969, at the age of 90.

Dr. Wood had practiced medicine in Ashley County since his graduation from the University of Arkansas School of Medicine in 1912. He was a member of the Ashley County and Arkansas Medical Societies and the American Medical Association.

Dr. Wood is survived by his wife, Mittie Deal Wood; two sons, Dr. Julian Wood of Seminole, Oklahoma, and Dr. Jack Wood of Fayetteville; one daughter, and seven grandchildren.

* * *

Dr. E. J. Brown

Dr. E. J. Brown of Mansfield died October 7, 1969. A native of Lucas, he graduated from the University of Arkansas School of Medicine in 1910.

Dr. Brown was a physician and surgeon and practiced medicine in Scott and Sebastian counties for more than fifty years. He was a member of the Scott County and Arkansas Medical Societies, the Fifty Year Club, and the American Medical Association.

Survivors include his wife; two daughters; a brother, Dr. J. R. Brown of Texarkana; a sister, and two grandchildren.



PERSONAL AND NEWS ITEMS

Dr. Millwee Honored

The 1969 catalog of the 9th annual Woodruff County Fair was dedicated to Dr. Fay Millwee of McCrory, recognizing his many years of service to that organization. Dr. Millwee has been practicing medicine in McCrory for eighteen years.

Dr. Saltzman Delivers Two Speeches and Is Elected President of Tuberculosis Association

Dr. Ben N. Saltzman of Mountain Home was elected president of the Southern Tuberculosis Conference, which met in New York City in conjunction with the 20th International Union Against Tuberculosis.

Dr. Saltzman also made two major addresses during recent months. "Medical Aspects of Rural Occupational Health" was the title of his speech at a St. Louis meeting of the American Medical Association Congress on Occupational Health. "Providing Health Care in Rural Areas" was his subject before a regional gathering of the American Academy of Pediatrics, also held in St. Louis.

Emergency-Medical Service Courses For Jefferson County

The Jefferson County Medical Society is cosponsoring and providing instruction in an emergency-medical services course for ambulance drivers and attendants, firemen, policemen, and other rescue personnel in their county in cooperation with the State Health Department. Those who complete the course will receive a certificate that will count toward a license requirement when and if such training becomes mandatory by law.

I wish to thank the doctors of the State of Arkansas for my fine relations with them during my practice of forty-one years.

I am closing my office as I am unable to work since my back surgery, which left me paralyzed on the right side.

Dr. Hoyt R. Allen

Doctors Plan Teflon Tests

Dr. Harry Hayes, Jr., associate clinical professor of surgery, and Dr. Kirk M. Smith, a surgery resident, both of the University of Arkansas Medical Center, will try to determine whether teflon wanders when used in the body. The doctors are working under a $3,000 research grant. Teflon may have potential uses in plastic surgery if it is shown that it does not migrate.

Dr. Scurlock Returns

Dr. W. R. Scurlock has returned to the Union County Medical Society now that he has completed military service. His specialty is general surgery with offices at 412 North Washington, El Dorado.

Dr. Guenthner Guest Speaker

Dr. John F. Guenthner was the speaker at a recent Mountain Home Rotary Club meeting. He discussed some of the problems faced by the Arkansas State Medical Board of which he is a member.

Fort Smith Clinical Society

Three national experts in clinical medicine and surgery addressed a symposium held earlier this fall by the Fort Smith Clinical Society. Chairman for the symposium was Dr. S. E. Landrum. Moderators were Dr. William C. Holmes, Jr., and Dr. Edward E. Clemmons.

Dr. Scarborough in Canal Zone

Dr. W. R. Scarborough, formerly of Clarksville, writes that he and his family are enjoying their new home in the Canal Zone. Dr. Scarborough is working at the Outpatient Clinic of the Gorgeas Hospital in that area. His friends may write him at: P. O. Box 64, Balboa Heights, Canal Zone.

Doctor Associates

Dr. H. W. Ward announces the association of Dr. Charles Edmondson. Both are radiologists on the medical staff of Springdale Memorial Hospital. Dr. Edmondson is the brother of a Springdale physician, Dr. Rogers Edmondson, with whom he practiced for several years.

American College of Physicians

Specialists in internal medicine held a regional meeting in Hot Springs in September. Special guest at the proceedings was Dr. Samuel P. Asper of Baltimore, Maryland, who is national president of the organization. Dr. Jerome S. Levy of Little Rock gave general direction to the meeting as governor of ACP for Arkansas.

Dr. Bachman Presents Program

Dr. David S. Bachman was recently a featured speaker at a leadership conference on smoking and health that occurred in Springdale.

Phillips County Society Aids Building Fund

Dr. Evan J. Kurts, president of the Phillips County Medical Society, presented a check in the amount of $10,000 on behalf of the Society to officials representing the building fund for a proposed community center to be built at Helena on the Phillips College campus.

Dr. Lawson Makes Recommendation

Representing the Washington General Hospital medical staff, Dr. Wilbur Lawson recommended to city of Fayetteville officials at a recent meeting an ambulance service run by the hospital with trained personnel. Such a proposal has been made to the hospital board with the stipulation that no extra costs be passed on to the paying patients of the hospital.



Bowie and Miller Counties

The Woman's Auxiliary of Miller and Bowie Counties met in the home of Mrs. J. K. Laws for a morning coffee, honoring wives of new doctors in Texarkana.

Hostesses were Mrs. Ben Floyd, chairman; Mrs. Laws, Mrs. Joe McGough, Mrs. Robert Smith, Mrs. James Harrison, Mrs. T. J. Robison, and Mrs. A. A. Little.

TUBERCULOSIS  ABSTRACTS

Sponsored by Arkansas Tuberculosis and Respiratory Disease Association

TOWARD CONTROL OF VIRAL INFECTIONS OF MAN

Of the available approaches to the control of infections due to viruses, the greatest advances have been made in the development of vaccines, but other avenues are also open. Progress to date and problems yet to be overcome are reviewed.

There are today three possible approaches to the control of infection caused by viruses: immunologic (vaccines), host resistance (interferon), and chemical (drugs).

The most effective and economically efficient control procedure attempted to date is specific immunization by vaccines from either live or killed viruses. The latter may be made with adjuvants which enhance the immune response. Human immune globulins are of limited usefulness in the control of viral infections.

A brief review of some of the developments toward protection against viral infection follows:

Smallpox vaccine has been the foundation for the vaccination concept. With gradual improvement in its quality and purity, today this vaccine is bacteriologically sterile and its potency is preserved by drying.

The second viral vaccine to be developed was against rabies. Until recently it was a crude preparation, but propagation of the virus in cell cultures has made possible the production of highly purified killed-virus and attenuated live-virus vaccines for experimental use.

The yellow fever virus is the only one of 230 arboviruses that has yielded satisfactorily to vaccine control.

Influenza A & B in the early 1940's were the first of the respiratory virus vaccines. Influenza vaccine may effect a reduction in illness of 75 to 90 per cent or more. However, a near-total antigenic alteration tends to occur in influenza A virus about every 10 years and renders the previous vaccine useless. An urgent need is for a vaccine that provides protection against a number of viral strains.

The live-virus approach against respiratory syncytial virus has been explored, but to date attenuation of the virus has been inadequate.

POLIO VACCINES

Reduction of poliomyelitis to insignificant levels in many countries speaks for the effectiveness of both live- and killed-virus vaccines. Live vaccine has many advantages, but low effectiveness has been reported in some tropical areas where improved living conditions have delayed the child's first experience with the virus to an older age than formerly. Continuing infection of the enteric tract with a multiplicity of indigenous enteroviruses may interfere with vaccination by preventing growth of the vaccine strains.

Work on vaccines for the three myxovirus infections of childhood—measles, mumps, and rubella—is in progress. Extensive and proper administration of vaccines against these diseases should result in their near elimination from the United States within a few years.

With the availability of new viral vaccines and the expectation of others in the near future, methods must be developed to simplify administration and to reduce costs.

The use of adjuvants should make it possible to achieve a greater and longer-lasting immunity with a smaller antigenic mass and fewer doses than with aqueous material.

HOST RESISTANCE

For more than three decades it has been known that infection with one virus may limit or exclude infection with a second, unrelated virus. This is called the interference phenomenon, which has been shown to be mediated by a protein of low molecular weight, called interferon. It is produced by virus-infected cells and protects new and uninfected cells from viral infection. Thus, interferon, rather than the conventional antibody immune mechanisms, may be

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Maurice R. Hilleman, Ph.D. *Science* (Vol. 164, No. 3879), May 2, 1969.

responsible for recovery from viral infections in its early stages.

Though active to some degree in experimental tests, interferon prepared in cells outside the body has not achieved practical importance. The alternative approach is use of a safe and effective substance to stimulate the body to produce and distribute its own endogenous interferon. No substance so far tried has as yet proved satisfactory.

Recent research has led to the discovery that certain double-stranded ribonucleic acids are highly active in inducing interferon and host resistance both in animals and in cells in culture. Possibly the presence of a form of viral ribonucleic acid provides an "alert" or "alarm" reaction in the cell, causing it to make interferon.

The possibility of using interferon inducers in human and animal medicine is being actively explored. The interferon mechanism, with its broad spectrum of antiviral activity, gives hope for eventual prophylactic control of those viral infections in which the number of serotypes is too great to control by vaccines. An example is the common cold.

Intensive search for chemical substances for preventing or treating viral diseases have not thus far been rewarding. Vaccines and interferon are prophylactic and do little to aid the cell once it is infected. At present the best hope for the cure of viral infection seems to rest on the chemical approach.

Research in viral chemotherapy has not yet achieved the status of an exact science, hence random screening as well as rational approaches will probably continue to be used. Studies may not be limited to compounds which are nontoxic for cells; rather, the specific antiviral and anticellular activities of a number of substances may be defined in the hope that this may lead to synthesis of nontoxic antiviral compounds on a rational basis.

TEAM PLAY NEEDED

The development of any measure for the control of viral disease, whether it be by immunological, chemical, or host-resistance procedure, is necessarily a slow and painstaking process for which a sophisticated technology must be evolved and a large body of information accumulated. The overall achievement requires the cooperative team play of a wide variety of disciplines, including at least the fields of virology, cell biology, biochemistry, biophysics, pathology, clinical medicine, epidemiology, and applied biology, and, of course, a large outlay of funds.

It is possible that viruses may play a role in the vast majority of the illnesses of mankind. The degree to which viral vaccines may prevent such illnesses remains to be seen. Meantime, it seems possible that widespread use of existing and yet-to-be-developed vaccines may eliminate, or reduce, the future incidence of illnesses in which a viral role is not even suspect at present.

ANSWER—What's Your Diagnosis?

DIAGNOSIS:

Wilms tumor (embryomo) of the left kidney.

X-RAY FINDINGS:

A large intro-renal mass is present in the lower pole of the left kidney as shawn by distortian and stretching of the renal pelvis and colyces.

ANSWER—Electrocardiogram of the Month

RATE: 52 RHYTHM: Idioventriculor

PR: .... sec. QRS: .20 sec. QT: .60 sec.

SIGNIFICANT ABNORMALITIES:

P waves are visible only occasianally, ot long intervols. Idioventricular rhythm, morked prolangation of QRS and increosed valtage af T woves which ore rother norrow.

INTERPRETATION: Abnormal

Chonges due to morked hyperkalemia.



December, 1969

THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 66 No. 7

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References: 1. Danhof, I. E.: Report on file. 2. Hoon, J. R.: Arch. Surg. *93*:467 (Sept.) 1966.

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Office Treatment of Nasal Fractures

Harry Hayes, Jr., M.D.* and Donald A. Vance**

The most common fracture of the face is the fracture of the nose. The usual causes are automobile accidents, sports injuries and altercations. With a little experience most nasal fractures are easily treated in the doctor's office or emergency room.

The pertinent anatomy must be recalled. The upper one-third of the nose is supported by the paired nasal bones, the middle one-third by the paired upper lateral cartilages and the lower one-third by the paired alar cartilages. The support of the bridge of the nose is derived in large part from the nasal septum. Some of these terms are purely clinical and do not agree with the terminology used in the anatomy books.

The usual nasal fracture results from a blow from one side and thus the nose will be deviated away from the side of the injury. If only the cartilaginous portion of the nose is involved, the resiliency of the cartilage will usually allow these structures to spring back to the original position. Where the nasal bones are driven to one side the cartilaginous structures usually follow. Depressed fractures are also seen with telescoping of the nasal bones back into the nasal cavity or the ethmoid area.

The diagnosis of nasal fracture is best made clinically. Most helpful is the history of trauma including the direction and intensity of the blow combined with the clinical signs of fracture. These signs are nose bleed, pain, swelling, ecchymosis and sometimes impairment of breathing. Any laceration should raise the question of a compound fracture or possible cartilage exposure. Examination inside the nose may reveal displacement of the septum along the dorsum or dislocation out of the vomer groove in the floor of the nose. At times intranasal examination cannot be completed until the time of correction when a vasoconstrictor has been applied inside the nose. Any suspicious injury to the nose should have x-rays for medico-legal reasons but usually x-rays are of little help.

The treatment of simple nasal fractures may be undertaken as soon as the patient is seen if the swelling is not severe. Simple nasal fractures are not true emergencies and if the bleeding is controlled treatment can be delayed for 6 or 8 hours or up to two weeks, if there are other more serious injuries.

The patient is placed on the treatment table and the head is slightly elevated. A narcotic or a barbiturate may be given to allay apprehension. If skin preparation is necessary the eyes are protected with boric acid. Drapes are applied and the interior of the nose is anesthetized either with a cocaine spray or cocaine powder on applicator sticks. One stick is inserted along the dorsum of the nose (anterior ethmoidal nerve) and the other is placed in the floor of the nose (sphenopalatine ganglion). This pro-



Figure 1

* 500 South University, Little Rock, Arkansas.
** Senior Medical Student, University of Arkansas Medical Center.

cedure may be necessary on both sides. If necessary, a little xylocaine with adrenalin can be infiltrated over the fracture site. Sometimes a regional block can be given by injecting a little xylocaine right over the infraorbital nerve. The interior of the nose is then inspected and clot and debris is removed with gentle suction. External deviations are corrected by digital pressure over the nasomaxillary junction (Fig. 1). The nose is then held in a central position. Depressed nasal bones are elevated with a knife handle or some other blunt instrument passed through that side with outward and upward pressure from beneath the nasal bones (Fig. 2). If there is significant depression of the nasal bones it may be necessary to put a vaseline pack high in the nose beneath the bones to hold these in the proper position. If the reduction goes smoothly and there is no bleeding, packing may not be necessary.

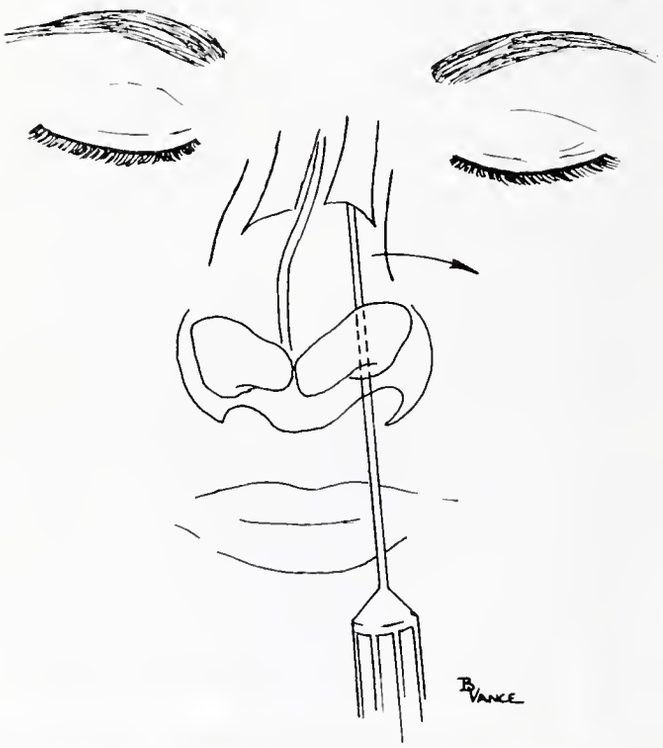


Figure 2

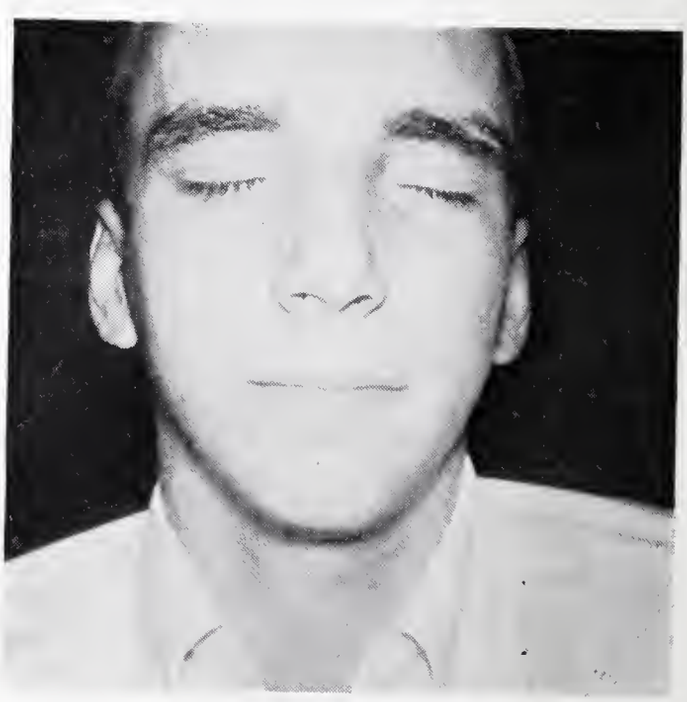
An external plaster of paris splint is applied to hold the bones in position and to diminish any further swelling. A dislocation of the nasal septum is corrected at the same time by the use of the Asch Septal forceps and the septum is simply lifted back into position. The septal restoration must be maintained with appropriate packing in one or both sides.

Lacerations of the nose are cleaned and sutured with meticulous technique at the time of fracture reduction. The treatment of the severely compound and/or comminuted fracture is beyond the scope of this paper, but must be considered in any case of laceration. One must also look for and treat a septal hematoma accompanying nasal fractures. If such a hematoma is not evacuated immediately a septal abscess will result which can cause liquefaction necrosis and loss of the septal cartilage with a resultant saddle nose deformity.

In the occasional case the nose is still deviated after a satisfactory reduction has been obtained. The problem here is a pre-existing deviation of which the patient may or may not have been aware. Careful questioning on this point is necessary.



PRE-OPERATIVE



POST-OPERATIVE



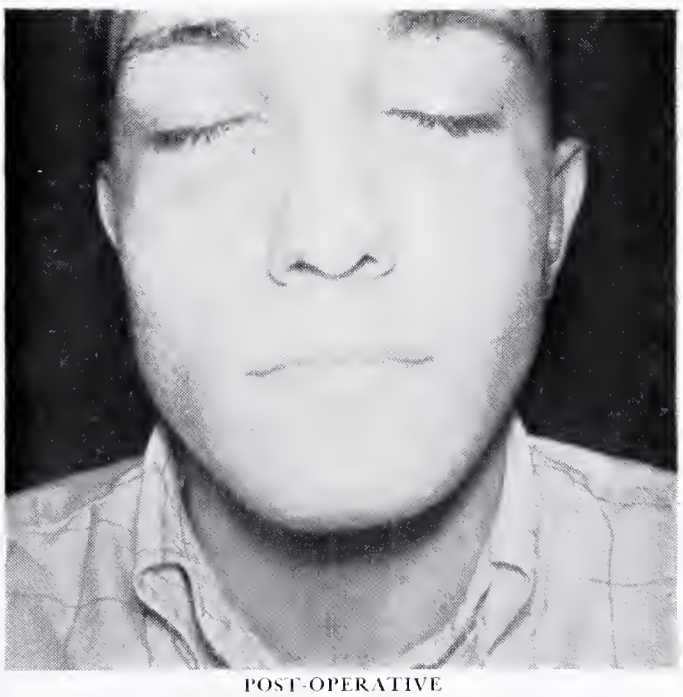
PRE-OPERATIVE



POST-OPERATIVE



PRE-OPERATIVE



POST-OPERATIVE

The nasal splint is fixed to the face with tape for one week and then removed in the office. Any nasal packing should be taken out on the third or fourth day unless the pack provides considerable support. For severely twisted and distorted noses it may be necessary to keep the pack in for a full week. After the splint is removed a nasal brace may be necessary for a week or two if swelling persists and we warn the patient not to engage in any contact sport for several weeks.

We find it helpful to make photographs of the patient when first seen and also at the time of surgery, if operation is delayed for any reason, and then again at a later date (see accompanying photographs). These patients should also be warned that scar tissue may form inside the nose and produce a late deviation of the nasal septum which may require a submucons resection. This diagnosis is made when the patient has progressive difficulty in breathing on one side of the nose. These patients should be referred to the otolaryngologist for evaluation.

In summary then, the very common condition of nasal fracture can be handled in most cases in the doctor's office or emergency room using local and/or topical anesthesia. A nasal fracture is not a true emergency and treatment may be delayed a few hours or weeks.

We wish to thank Brenda Vance for preparing the line drawings.

An Unusual Case of Hypertrophic Pyloric Stenosis*

Dale D. Briggs, M.D., and Frank M. Bauer, M.D.

The diagnosis and management of hypertrophic pyloric stenosis is usually not difficult. The following case presented and responded to treatment in an unorthodox manner and serves as a useful reminder that diseases do not always conform to classical patterns. Such unusual cases also present the greatest challenge to the physician.

Present Illness

A 2.94 Kg Caucasian female infant was born to a gravida 1 para 0, 24-year-old mother after a normal gestation and delivery using epidural anesthesia. Initial examination at 10 hours of age was considered normal. One mg. of vitamin K_1 was given intramuscularly. Glucose-water feedings were started at 12 hours of age, but the infant regurgitated after each feeding. At 28 hours of age this became more forceful, and flecks of bright red blood were noticed in the vomitus. A repeat physical examination revealed jaundice, but was otherwise normal.

Past History

There were no known cases of pyloric stenosis or infant deaths secondary to vomiting in the family of either parent. The mother had an inguinal herniorrhaphy at 8 years of age and had the contralateral side repaired following this delivery.

Clinical Course

A hemorrhagic disorder was suspected, and blood was drawn for analysis. The site of femoral puncture clotted rapidly and no hematoma formed. Laboratory values were as follows: Hemoglobin 26 gm%; hematocrit 72%; WBC 13,900; differential 5 eosinophils, 49 neutrophils, and 45 lymphocytes, platelet count 272,000; prothrombin time 12.4 seconds; urinalysis normal; serum bilirubin 10.3 mg%.

After the normal blood studies were obtained and because of the protracted vomiting, an upper GI series was performed. Spot films of the pyloric area showed narrowing of the pyloric canal (Figures 1 and 2) and only a small amount of barium in the duodenal bulb after fifteen minutes (Figure 2). Several fluoroscopic glances in the interval between Figure 1 and Figure 2 revealed no relaxation of the pyloric area. Therefore, a diagnosis of pyloric stenosis was made thirty-two hours after birth.

Following the X-ray studies, the infant was placed on IV fluids and electrolytes. An "olive" could still not be palpated after repeated exami-

* *Address for Reprints:* (D.D.B.) 1210 Look Street, Little Rock, Arkansas 72204.



Figure 1

Initial spot film showing small amount of barium in narrow pyloric canal.



Figure 2

Spot film at fifteen minutes after barium introduced showing small amount in duodenal bulb and classic "string sign."

nations. At 58 hours of age surgery was performed, and a hypertrophic pylorus was found which had the usual gross appearance, but was not as firm as the typical pyloric tumor. The muscle was incised, and the mucosa bulged into the incision in the usual manner.

Postoperatively the patient continued to regurgitate after each feeding of both glucose-water and milk preparations. Her weight remained stable the next five days in spite of the vomiting, but she had been maintained with intravenous fluids during this time. A repeat upper GI series on the 5th postoperative day (Figure 3) showed an adequate pyloric canal. The same day she began retaining feedings and has done well since.

Discussion

It is well known that pyloric stenosis often



Figure 3

Spot film of pyloris on fifth day following surgery revealing adequate lumen of pyloris.

occurs in a first-born male infant and is usually manifest at about 4 to 6 weeks of age by projectile vomiting. There is often a family history of this disorder. The infant may develop dehydration, malnutrition, hypokalemia, and hypochloremic alkalosis. These conditions usually become manifest after several days to several weeks of symptoms. The pyloric tumor can often be felt along the lateral border of the right rectus muscle slightly inferior to the margin of the rib cage. Palpation of this "olive" is considered diagnostic. Waves of reverse peristalsis, in the stomach, are often visible beneath the abdominal wall.

This case represents a marked contrast to the usual one. The onset of symptoms was between 12 and 24 hours of age, at the time of the infant's first feeding. Nothing unusual was suspected initially. Nursing personnel became alarmed only when flecks of blood appeared in the vomitus, and prompted the need for investigating for a bleeding disorder. The infant had no problem with fluid or electrolyte imbalance because of the short duration of symptoms. The pyloric tumor could not be felt even after the diagnosis had been made by X-ray. This was probably due to the soft consistency of the mass. The persistence of vomiting for five days after surgery is somewhat unusual, and many of these infants are able to retain feedings within a matter of hours following surgery.

The unusual nature of this case prompted a review of the English literature which revealed no other female infant diagnosed at an earlier age and only one[1] that had been operated upon for pyloric stenosis earlier, at 34 hours of age. This case and one other[2] which was operated at four days of age both had persistent vomiting for several days following surgery. This may represent a symptom to be expected from infants subjected to a pyloromyotomy at a very early age.

Summary

A case of congenital hypertrophic pyloric stenosis in the newborn period is presented. In the English literature no report was found of an earlier diagnosis of hypertrophic pyloric stenosis in a female infant. Only one case of a female infant having surgery for this condition at an earlier age was found, and a similarity in the postoperative clinical course was noted.

Acknowledgment

The authors would like to thank Joe A. Norton, M.D., who performed the radiographic studies.

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Exposure to Dust in Cottonseed Oil Extraction Industry

M. H. Noweir (165 Horria Ave, Hadra, Alexandria, Egypt), Y El-Sadek, and A. A. El-Dakhakhny

Arch Environ Health 19:99-102 (July) 1969

Two cottonseed oil extraction plants were surveyed and half of the working population examined. Thirty per cent of those exposed to "cotton dust," composed mainly of plant debris, complained either of breathlessness or chest tightness, or both, while those exposed to "cottonseed dust," composed mainly of seed fragments and other parts of the seed, had no complaints. Cottonseed dust seems to be physiologically inert.

Atheromatous Microemboli

G. D. Perdue, Jr., and R. B. Smith, III (Emory Univ School of Medicine, Atlanta)

Ann Surg 169:954-959 (June) 1969

Clinical features of 26 patients with atheromatous microemboli to multiple visceral organs or to the lower extremities, or both, are reported. The possible usefulness of heparin and corticosteroids is discussed. Recognition of the clinical syndromes, confirmation by muscle biopsy, and identification of the source by arteriography are all important. Recognition and treatment of a surgically curable lesion eliminates primary sources and prevents recurrences.

Radiation Therapy and Ovarian Carcinoma

W. L. Rockwell, M.D.*

When the use of radiation therapy in the treatment of ovarian carcinoma is evaluated, two points require clarification. The first is whether such therapy is to be preoperative or postoperative. Those who deal with this disease usually establish the diagnosis by operating on the patient. As a result, the indications for postoperative therapy become the clinician's chief interest and will be the form of therapy which we will consider. Second, involves the intent of such therapy. Is it to be curative or palliative? This second question will be the topic of our discussion and the presentation will express the prejudice existent at the University of Kansas Medical Center.

There are two sources of information which one might reasonably expect to contain pertinent data. One is the clinical literature and the other, the study of radiobiology. Consider, first, evaluation of the clinical data. In order to acquire a large enough number of cases to have the results valid from a statistical standpoint, a composite of several series is usually employed. This becomes difficult, if not impossible, to make meaningful because: 1) there is no universally accepted histologic classification of ovarian tumors; 2) there is no uniformity with regard to the clinical staging of ovarian carcinoma; and, 3) these are all retrospective studies in which there is no mention of the criteria used to decide whether a given patient would, or would not, receive radiation therapy. In such circumstances an apparently statistically significant difference in survival, is probably related more to the method of selection, than to the efficacy of radiation therapy. From the standpoint of the radiotherapist, clinical reports are guilty of numerous omissions of critical data. Such things as the quality of the beam, the size and shape of the port, the schedule of fractionation, the length of time required for the course of therapy and the tumor dose delivered, are essential factors if any sort of judgment is to be made as to the adequacy of the therapy. Without these facts there is no way of separating patients who have received adequate therapy from those who were, by current standards, inadequately treated. Finally, with at least a dozen histologically distinct primary malignant ovarian tumors known to occur, these data are often handled as if we were considering a single neoplasm. These diverse tumors exhibit different degrees of radiosensitivity. Some of it is related to the degree of differentiation present in the individual tumor and some stems from the innate radiosensitivity of the cell of origin of the tumor.

Without belaboring the point further, it seems obvious that the clinical literature is useless with regard to evaluating the efficacy of postoperative radiation therapy in the treatment of ovarian carcinoma. Actually, this statement is a bit harsh because two conclusions can be reached. First, radiation therapy should be an integral part of the therapy of all dysgerminomas. They are one of the most sensitive tumors known to occur in man and a tumor dose of 3,000 rads delivered over a period of four to five weeks is usually adequate to destroy the tumor. Second, in regard to ovarian carcinoma as a whole, radiation therapy is obviously not of monumental importance or, even with our clumsy approach to the problem, its benefits would be obvious to all.

Radiobiology was mentioned earlier as a second source of information which might be brought to bear on this problem. Since ionizing radiation, as a method to kill cancer, is under discussion, a brief consideration of some of the basic mechanisms involved seems in order. There are several mechanisms by which ionizing radiation can cause cell death but only two need be considered. The DNA of the target cell suffers damage as a result of interaction with free radicals formed as a result of radiation. It is currently thought that all cells contain enzymes which, given time, can repair such damage. If, however, a cell enters mitosis before repair is complete, the unrepaired defect may be of such kind or degree that the cell is unable to properly complete mitosis. As a result either the cell attempting division or one (or both) of its

* University of Kansas Medical Center, Kansas City, Kansas.

daughter cells die. This is referred to as mitotic death because cell death will occur only if division is attempted. Obviously, cells that divide frequently have only a brief period of time to effect the repair of damaged DNA before mitosis begins. Cells with a short generation time inevitably begin the process of mitosis with repair incomplete and cell death is common. Such cells are said to be radiosensitive. Another method by which radiation can cause cell death, is by its effect on small blood vessels. It can cause an obliterative endarteritis in the microvasculature of a given tissue and effect cell death by ischemia. Ionizing radiation is no respecter of tissue and normal tissues can perish, as a result of radiation, as well as neoplasms. They, like tumors, present a spectrum of radiosensitivity. Radiobiologists have found that the kidney, when radiated, begins to show radiation nephritis, as a result of vascular obliteration, at doses as low as 2,000 rads in five weeks. With delivery of 3,500 rads in five weeks, death of the organism by renal failure is practically assured. This same dose if delivered to small bowel, will produce severe diarrhea. The epithelium of the small bowel has a very short life span, estimated at from two to four days. By means of the mechanism of mitotic death the lumen of the small bowel is soon stripped of its epithelium. This leads to a loss of protein, fluid, and electrolytes as well as problems secondary to bacterial invasion.

With the exception of the dysgerminoma, a tumor dose of at least 5,000 rads in five weeks is required in order to have any hope of curing the average ovarian carcinoma. When an ovarian malignancy has spread beyond the pelvis, we abandon any attempt at treatment. The kidneys prevent even approximation of a tumoricidal dose and with the small bowel assuring significant morbidity, we see no justification for radiotherapy. We occasionally palliate patients either by the "abdominal bath" or "moving-strip" techniques. However, this form of treatment is almost entirely restricted to cases of massive ascites, uncontrolled by other means, and with morbidity which justifies the risk.

We have all made the clinical observation that tumors tend to outgrow their blood supplies and as a result frequently exhibit areas of necrosis. Most tumor masses possess areas of micronecrosis by the time they reach a diameter of three centimeters. The tumor cells adjacent to the necrotic area are hypoxic and will eventually die when they become anoxic. It was noted earlier that mitotic death was produced by free radicals damaging the DNA of cells which periodically undergo mitosis. The radiobiologist has discovered that the number of free radicals produced, by a given dose of radiation, is directly related to the oxygen content of the tissue being radiated. Obviously then cells existing in an environment deficient in oxygen will suffer less damage because fewer free radicals will be produced. It has been estimated that this results in an increase, by a factor of almost three, the ability of the hypoxic cell to endure radiation. Phrased another way, this means that a mass of tumor cells which when well oxygenated would perish if subjected to 6,000 rads would, in a hypoxic environment, require a dose of approximately 18,000 rads in order to be killed.

Unlike the abdomen, the female pelvis contains no structures notably sensitive to radiation. The rectum is the most sensitive structure but even it routinely withstands doses of radiation in excess of 6,000 rads over a period of six weeks. With ovarian lesions apparently confined to the pelvis, whole pelvis radiation is administered. This includes lesions apparently confined to one or both ovaries. Although five year survival figures vary considerably, the average survival for such patients is approximately sixty per cent. Obviously, forty per cent of patients with such favorable operative findings, have residual disease. The radiotherapist has his best chance to eliminate a tumor when it is small. When the tumor is so small that it cannot even be seen, his prospects are brightest. We realize that sixty per cent of such patients are being radiated needlessly, but only by radiating them all can we be sure of treating those who have undiagnosed residual disease. If one elects to wait for palpable tumor to appear, in order to single out those with residual disease, the lesion may be large enough to possess areas of necrosis and the associated hypoxic cells may prevent a cure.

It was my desire this morning to acquaint you with the philosophy existent at the University of Kansas Medical Center, with regard to the use of postoperative radiation therapy in cases of ovarian carcinoma. An attempt was made to acquaint you with the reasons underlying our

choice of therapy. It is based primarily on the radiobiologist's data and can be summed up with ease and brevity. All postoperative ovarian carcinoma patients, in whom evidence for extension outside the pelvis is lacking, receive whole pelvis radiation. Patients with disease which has escaped the pelvis are given no postoperative radiation therapy. Two exceptions to the last statement should be noted. First, palliation, in its strictest sense, is offered for such acute problems as may arise, if it is felt that radiation therapy is the treatment of choice. Second, dysgerminomas, because of their extreme sensitivity, may be treated with curative intent even where extension outside the pelvis is known to exist. This can include involvement of paraaortic, mediastinal and supraclavicular nodes.

The views which have been expressed were not meant to be delivered with any ring of authority or even the slightest hint of missionary zeal. Discussing the treatment of a disease as poorly understood as cancer, while standing knee deep in clinical misinformation, one feels anything but confident.

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Fulminant Meningococcemia and Disseminated Intravascular Coagulation

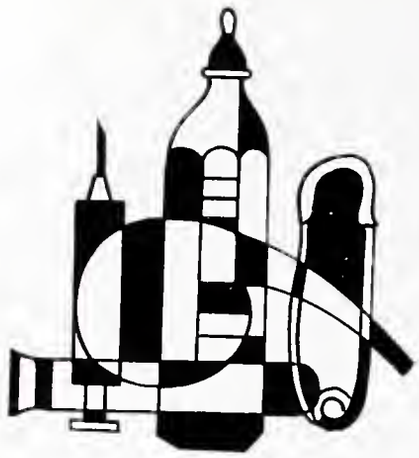
A. Winkelstein *et al.* (Fort Jackson Army Hosp, Fort Jackson, SC)
Arch Intern Med 124:55-59 (July) 1969

Disseminated intravascular coagulation (DIC) is of a major pathogenic significance in rapidly lethal cases of fulminant meningococcemia. This syndrome can be clinically detected with a simple, readily available battery of coagulation tests: the platalet count, prothrombin time, and activated PTT. These tests are sufficiently sensitive to detect the earliest phases of DIC, providing a rational means for selecting patients for anticoagulant therapy. Simultaneous abnormalities in all three tests in a patient with meningococcal infection may be regarded as suggestive evidence of DIC. Three patients with evidence of this coagulopathy were successfully treated with a combination of heparin and clinical dextran.

Iatrogenic Coronary Ostial Stenosis

M. D. Silver *et al.* (100 College St, Toronto)
Arch Path 88:73-77 (July) 1969

Three men who had high pressure coronary artery perfusion during insertion of aortic Starr Edwards prosthesis in 1963 developed disabling angina pectoris within three months of surgery and died within 11 months. At autopsy the ostia and first 1 to 2 cm of cone or both coronary arteries were severely stenosed by intimal thickening with loosely textured, cellular, mycopolysaccharide-rich fibro-muscular tissue almost devoid of elastic fibers. Wide discontinuities of medial elastic fibers were related to some intimal plaques. High perfusion pressures may cause injury by overdistending the vessels; the media were destroyed and a repair process caused lethal intimal thickening.



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Grand Rounds

Reticuloendothelial Disorders

Discussors—D. H. Berry, M.D.,* Wilma C. Diner, M.D.** and Max G. Haynes, M.D.***
Participant—Robert Arrington, M.D.****
Editorial Director—Jerry G. Jones, M.D.*****

Case Presentation

DR. ARRINGTON: This Negro female infant was referred by her private physician and admitted to the University of Arkansas Medical Center on July 28, 1969, at the age of 8 months. She was born to an 18-year-old G_2P_1 female after a term gestation complicated by premature rupture of the membranes. Birth weight was 7 lbs. 8 oz., and no neonatal complications occurred. At a 2-month check-up, her weight was 9 lbs. At that time she had "white spots" in her skin which were being treated with pinches of sulphur orally. For the next three months, she ate well and seemed well, but when she was seen at age 5 months for fever and cough she weighed only 11 pounds. She became asymptomatic on oral antibiotics.

Three weeks prior to admission her mother noted "knots" developing bilaterally in the patient's neck. Twelve days prior to admission her private physician gave her an injection and did a blood test. At that time she was asymptomatic. Six days later the "knots" had not decreased in size, and a diagnosis of pneumonia was made. She was given intramuscular injections. She became symptomatic during this interval with fever, anorexia, lethargy, and rapid respirations. Her private physician referred her to the University of Arkansas Medical Center for a possible fungal infection.

Past History

No immunizations have been given.

Family and Social History

Thirteen people live in a four-room house with well water and outdoor plumbing. The patient's grandmother and great step-grandfather have positive PPD skin tests. A neighbor had active TB in 1962 but is now inactive following treatment. Several persons in the family have positive histoplasmin skin tests including her mother (her PPD is negative). Skin testing of the family was done by the County Public Health Nurse at our request.

Physical Examination

Examination on admission revealed a thin, small for age infant with large cervical swelling bilaterally and rapid, shallow respirations. The vital signs were T 99°, P 160, and R 60. The head circumference was 42 cm, length 68 cm (50% for 8 months), and weight 5.7 kg (50% for 3 months). Auditory canals were occluded with creamy yellow cerumen, and the right tympanic membrane was dull red; however, the left tympanic membrane was not visualized due to bleeding which occurred each time the canal was

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curretted. Purulent waxy material has continued to accumulate in the left canal. The pharynx appeared erythematous without exudate. Neck was supple and there were 4 x 4 cm masses of enlarged nodes bilaterally in posterior cervical chain. The infant had tachypnea with mild intercostal retractions, and coarse breath sounds were heard in all lung fields, but no rales were present. The heart had a sinus rhythm without murmur. The abdomen was soft, and no visceromegaly or masses were palpable. Genitalia was that of a normal 8-month-old female. The extremities were thin but without abnormality. No neurological abnormalities were noted. Examination of the skin revealed small (1-5 mm) spots of hypopigmentation over the trunk and face. Also scattered over the trunk were 1 mm or smaller papular, purpuric lesions. In addition to posterior cervical nodes, there were shotty anterior cervical and femoral nodes palpable.

Laboratory Data:

	7/29	8/1	8/5	8/12	8/22	8/26	9/3	9/4
Hb gm%		9.6	10.4		7.9	6.4	5.7	6.2
Hct. %	34	31	33		26	23	19	21
WBCx10^3	12.3	13.8	11.8	11.8	9.2	6.6		
Plat				95,000	260,000	149,000	54,000	25,000
Retic %							13.8	25
Sed rate mm/hr				28	57	45		

Smear consistently had nucleated erythrocytes, polychromasia, and some anisocytosis. The granulocytes consistently have had toxic granulations. Differentials were similar on several occasions.

Sickle prep was negative.

Serum electrolytes, BUN, Ca, P, and glucose were essentially normal. Bilirubin, amylase, prothrombin time, febrile agglutinins, VDRL, ASO, and cold agglutinins were also normal. Alk. P'tase was 24 KAU and SGOT 55 to 66 units.

Spinal fluid was within normal limits.

Urinalysis was normal.

Histo agar diffusions were negative x 2.

8/12/69 Complement Fixation:

Histoplasmosis	yeast	positive (1:32)
Histoplasmin	antigen	negative
Blastomycosis	yeast	negative
Coccidioidin	antigen	negative

8/22/69 Protein Electrophoresis *Immunoelectrophoresis*

	%	gm%		
Albumin	48.8	2.4	IGG	890 mg%
α_1	5.8	0.3	IGA	133 mg%
α_2	19.8	1.0	IGM	48 mg%
β	9.1	0.5		
δ	16.5	0.8		

Bone marrow aspirations were done on 8/12/69 and 9/4/69. Hypocellular marrow was with decreased megacaryocytes on 8/12/69 and absent megacaryocytes on 9/4/69. Granulocytic series shifted to immature forms with toxic granulations on 8/12/69 and also on 9/4/69 but to a lesser degree. Some histiocytes were observed in both marrow samples but no inclusions were observed. Erythroid series appeared increased.

Cultures of blood, urine, NP, CSF, node, bone marrow were negative for predominate organisms.

Percutaneous liver biopsy on 8/27/69 revealed fatty degeneration and numerous sharply defined granulomatous lesions.

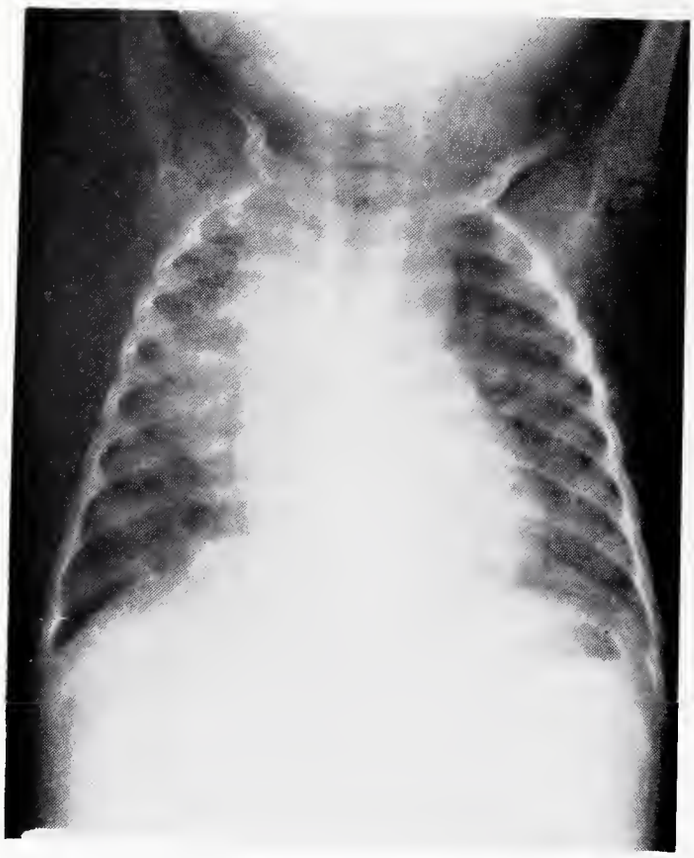
Skin tests: Intermediate PPD and histoplasmin negative on admission, 2nd strength PPD and histoplasmin negative on 8/12/69. Candida skin test negative on 8/30/69.

Hospital Course

The patient was admitted with a diagnosis of pneumonia and cervical adenitis. After cultures were taken, she was started on Ampicillin 100 mgm/kg/24 hours. She received 14 days of Ampicillin during which time she intermittently had temperature to 101° but on hospital day 13 began to spike to 102°. Her respiratory rate gradually increased from 60 on admission to 80-90 after 2 weeks. During this time the cervical nodes did not decrease in size, and hepatosplenomegaly developed with liver down 4 cm. and spleen down 2 cm. Cultures and skin tests were negative at that time. On 8/14/69 a left cervical node biopsy was done for culture and histology. The patient was then empirically begun on anti-tuberculous therapy. The node

biopsy was interpreted as being consistent with chronic granulomatous disease.

From the 14th to the 30th hospital day, the patient had daily temperatures of 101° to 104° and at times had a respiratory rate of 90-100.



Figures 1a and 1b
The patient.



Her weight fluctuated between 5500 grams and 5700 grams. She became anemic and thrombocytopenic. On the 31st hospital day, streptomycin was discontinued, and steroids were begun. Since that time the patient has been essentially afebrile. Her respiratory rate has persisted at 50-70 per minute, and she has had no weight gain. Current therapy is dicloxacillin, INH, pyridoxine, and prednisone.

Dr. Diner: The earliest chest films available to me were made on August 26, 1969. They show (Fig. 1) a diffuse pattern of interstitial infiltration throughout both lung fields. An alveolar pattern of infiltration is superimposed in the upper right lung field. Enlarged hilar and superior mediastinal lymph nodes are present bilaterally. Subsequent chest X-rays show some clearing of the alveolar infiltrate, although the interstitial and some alveolar pattern is still present. The lungs are over-expanded, probably indicating air trapping. X-rays of the skull, mastoids, and long bones are within normal limits.

Dr. Berry: The protocol is rather long because the course of this infant has been protracted. The patient is a 9-month-old female who showed evidence of failure to thrive as early as two months of age. This was clearly evident by 5 months of age, although the child was considered normal by the mother, and she was essentially asymptomatic except for a transient illness. However, at 7½ months of age, she developed cervical lymphadenopathy and was seen by several physicians. She had a respiratory disease which failed to respond to antibiotics and she was referred to our institution at 8 months of age. On admission to UAMC, she had cervical lymphadenopathy and a draining ear. For the next several weeks, she had low grade fever and failed to respond to adequate antibiotics. Indeed she had progressive lymphadenopathy and hepatosplenomegaly. During the past several weeks she has developed what appears to be a hemolytic anemia, and she has thrombocytopenia.

Before discussing her disorder, we will see the infant (Fig. 2). Cervical adenopathy is still present. The spleen and liver are enlarged, as indicated. The skin lesions have faded since prednisone was started.

The reason why we have had so much diffi-



Figures 2a and 2b
Chest roentgenograms of patient.



culty in coming to a firm diagnosis with this infant is that we are seeing manifestations of a reaction of the reticuloendothelial system. If we talk about these manifestations briefly we will come to a better understanding as to why we have had so much confusion in this case.

Reticuloendothelial Reaction

The reticuloendothelial system was originally described in 1913 by Aschoff. Perhaps it would be better understood if we recall what the European's call it, which is reticulohistiocytic system. It actually consists of three major groups. The *fixed reticulum cell* is found in the reticulum network in various sites such as the bone marrow, the reticulum network of the skin, the spleen, lymph nodes, liver, pulmonary alveoli, connective tissue, adrenal medulla, and even the pituitary. The free-floating type of reticulum cell is called *histiocyte* or macrophage. This cell is found everywhere the fixed reticulum cell is found. The free-floating cell in the blood which belongs to this system is the *monocyte*. All three cell systems have certain functions which can be grouped into three major ones. First is the metabolic function, in which the cells concern themselves with the metabolism of such things as carbohydrates, lipids, glycoproteins, certain minerals, etc. A second function is cytogenic. Reticuloendothelial cells are the stem cells for all cell forms seen in circulating blood. The third function is that of phagocytosis. Under normal circumstances, these functions are more developed in certain areas of the body. For example, the phagocytosic function in response to a foreign body is better developed in the pulmonary alveoli. The cytogenic function, of course, is found in the bone marrow and the spleen. The metabolic function is highly developed in the liver in the form of Kupffer cells. However, in response to a stimulus, either physiological or pathological, these cells can regain their total potentiality.

The macrophage removes degenerating red cells, leukocytes, etc. It responds to foreign bodies, particularly in the lungs. The macrophage can ingest bacteria, although the primary line of defense is the leukocyte. Certain types of infections are handled less well by leukocytes. In these infections, the macrophage plays a dominant role in the ingestion, not only of the organisms, but also of neutrophils that contain the organisms. The diseases are tuberculosis, histoplasmosis, brucellosis, etc. The causative organisms, because of the nature of the bacteria and fungi, are poorly handled by the body.

Macrophages can ingest them but kill them very poorly or slowly. The body responds with the coalescence of histiocytes in the form of giant cells, an infiltration of plasma cells, lymphocytes and monocytes, and the formation of a granuloma.

What disorder are we dealing with in this infant? She may have a malignant proliferation of histiocytes, called Letterer-Siwe disease. Secondly, she may have a type of infection previously described, such as a fungal disease, with a response of the host in the characteristic fashion. Thirdly, this child's disorder may be one of the recently described entities in which the individual's leukocytes are unable to handle normal infections. Their white cells cannot kill bacteria which normal ones can. The body again responds in a characteristic fashion: if the foreign material cannot be killed, wall it off. And this is exactly what it does, forming granulomas. This disease is called chronic or fatal granulomatous disease of childhood, and Dr. Max Haynes will discuss it for us.

Chronic Granulomatous Disease

Dr. Haynes: Chronic granulomatous disease is a hereditary defect of leukocyte function in which phagocytosis proceeds normally but the cells are unable to kill the ingested bacteria. This disease was first described in 1957 by Landing and Shirkley in Cincinnati and by Bridges in Minnesota. There have been 40 cases reported in the literature, but all cases are not being reported now. All reported cases are believed to have some type of genetic inheritance. It was initially thought to be a sex linked trait, since the classic form occurred only in males. However, in the past couple of years, it has been found in females and in males whose mothers cannot be shown to be heterozygous carriers.

The classic form of chronic granulomatous disease is actually thought to be only one of several defects in bacteriocidal function of phagocytic cells. It may represent a whole new spectrum of disease as did the discovery of G6PD enzyme defects in red cells and sickle cell disease in hemoglobin defects. The pathological findings are the same as any typical infectious granuloma, with Langhans' giant cells, central necrosis, and lymphocytic and histiocytic invasion. The histiocytes are said to be lipid-laden, and they sometimes take up an H&E stain. No organism has been found on various types of stains, and in vitro the granulomas have all been sterile, which is not usually the case with granulomas due to other diseases.

The *clinical features* are manifestations of the involvement of the reticuloendothelial system. Children with this disease have severe and prolonged infections occurring early in life, usually within the first weeks or months and nearly always before the end of the first year. The infections that produce the difficulty are organisms that are usually considered to be contaminants and would not be pathogenic to most of us. These patients can actually handle infections with a number of bacteria. Their defect seems to be specific for certain types of bacteria. Most patients that have been studied have been shown to handle streptococcal infections well, and they usually do not have trouble with pneumococcus, Hemophilus influenza, and some of the other common infectious agents. They have lymphadenopathy, usually in the cervical area, and over 90% will progress to form scrofula. They also have enlarged livers from granuloma formation and abscesses. Along with heptomegaly, they have splenomegaly from granuloma formation. Pulmonary disease is also present, with hilar adenopathy and pneumonia. The skin lesions are early complaints in these patients, and they vary from seborrhea-like lesions to lesions that can be confused with lupus vulgaris. Osteomyelitis is also a frequent infection in these patients, and Serratus marcescens is the most common organism cultured. It usually involves the small bones of the hand and may actually have multiple involvement. A propensity to heal completely, without any evidence of residual, has been noted.

These patients have been shown to have normal immunoglobulins, and in fact most of them have elevated gamma globulins, especially at the time they are having infections. An anemia is the type that is seen with chronic infection, usually normochromic and normocytic, and occasionally hypochromic and microcytic. These patients respond to infection with leukocytosis and fever, as we would expect of any patient. The bone marrow may show increased plasma cells and histiocytes, and some have even reported granulomas in the bone marrow.

Most of the articles now being published rep-

resent attempts to understand the *leukocyte defects*. It has been demonstrated by electron microscopy that all stages of phagocytosis are normal. The prolonged intracellular survival of certain bacteria is believed to represent a defect in one or more of the bacteriocidal mechanisms within the intact neutrophil or monocyte, and these are not well understood at the present time. After a bacterium is phagocytized by the neutrophil or monocyte, a phagocytic vacuole is produced. The leukocyte granules rupture into this, and there is usually a fall in pH near the particle that is ingested. In most cases, death of the organism results. Hydrogen peroxide is produced by the cell and in some cases by the bacteria. The streptococcus is one of the types of bacteria that produces hydrogen peroxide, and this is one of the bacteria which these patients' leukocytes destroy. Leukocyte granules of patients with chronic granulomatous disease have been demonstrated to contain the normal antibacterial agents, but they have a decrease in hydrogen peroxide production and a decrease in Hexose-Monophosphate shunt activity compared to normal cells.

Normal leukocytes will reduce nitro-blue tetrazolium dye during phagocytosis, but the leukocytes of patients with chronic granulomatous disease are unable to do this. This phenomenon is the basis for the screening test that is used now to diagnose these patients. After normal leukocytes are incubated with this dye and latex particles, over 90 percent of the neutrophils and monocytes will have ingested the particles and reduced the dye. Patients with typical sex linked chronic granulomatous disease will reduce less than 10% of the dye, and the mothers of these patients show about 50% activity. The mothers are actually thought to have two populations of cells, one normal and one like their affected offspring. If the dye test is positive, further leukocyte function studies should be performed. Also, studies of leukocyte function should be done on other family members so genetic counseling may be given.

Treatment mainly consists of accurate and sustained antibiotic therapy. Some feel that steroids may be helpful in breaking down the granulomas. Bone marrow transplantations will be of some help when this is possible.

Dr. Diner will present the radiological aspects in this disorder.

DR. DINER: I found three papers in the literature which present the *radiologic findings* of chronic granulomatous disease. The total number of patients in these three articles is 24. While we do not have enough cases to be certain of the usual radiographic findings, some consistencies are worth noting. An interstitial infiltration may be present, with coalescence of the larger lesions. Pneumonias come and go, and they are not necessarily related to antibiotic therapy. Dense patches of well-defined pneumonia are considered to be characteristic, and have been called "encapsulated" pneumonia. These lesions can become abscesses. They have a tendency to heal with calcifications. Some patients will have fine scattered calcifications similar to those seen in healed histoplasmosis. The lymph nodes also heal by calcification. One or two cases have showed speckled calcifications in the spleen. Bone lesions are those of osteomyelitis, primarily involving the small bones of the hands and feet.

Letterer-Siwe Disease

DR. BERRY: The last disorder we should consider in this patient is Letterer-Siwe disease. This is a malignant proliferation of histiocytes, which is disseminated throughout the body. It can involve all the organs where reticuloendothelial cells are found. Thus it may involve the skin, spleen, liver, lymph nodes, lung, bone, and bone marrow. It occurs equally in both sexes and age of onset is usually before 2 years. It is associated with failure to thrive, fever, eczematoid skin lesions, and draining ears. Lymphadenopathy, primarily cervical, is difficult to differentiate from adenopathy secondary to the infection associated with chronic otitis. These children may also have diabetes insipidus. Anemia develops, and eventually they will have thrombocytopenia and leucopenia. The diagnosis is made by biopsy of a lypmh node or the liver, which reveals the presence of histiocytes. A familial form of this disease exists. The possibility of an inability of these children's leukocytes, in the familial form, to handle infection deserves investigation. A great deal of variation is found in the literature in regard to therapy. Thus massive doses of antibiotics, anti-tuberculosis therapy and even chemotherapy have been used. Each of these regimes have reported suc-

cesses. This is clearly a disease we do not know enough about, and the overall low incidence makes it difficult for one institution or individual to accrue enough patients for adequate investigations.

Conclusion

This patient's clinical manifestations represent a reaction of the reticuloendothelial system. The etiology could be a type of infection, particularly a fungal disease. Second, chronic granulomatous disease of childhood should be considered, and lastly, Letterer-Siwe disease typically could produce these clinical manifestations.

Since the case summary was written, cultures of both the bone marrow and lymph nodes have produced histoplasma capsulatum. Thus, the diagnosis has been made and confirmed. The time lost before an accurate diagnosis could be made is regrettable. However, it has been said that it is all right to fall down if as we get up from the floor we pick something up. In this case, we have picked up knowledge even if we did require a long time to make an accurate diagnosis.

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Xanthomata in Primary Hyperlipoproteinemia

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In 23 patients with primary hyperlipoproteinemia arranged according to the percent of lipids present in the β-lipoprotein fraction, three distinct groups became apparent, coinciding with types II, III, and IV of Frederickson. The serum cholesterol content is elevated in these types. Hyper-β-lipoproteinemia (type II) is characterized clinically by xanthoma tendineum and xanthelasma palpebrarum, and a high incidence of arteriosclerotic cardiovascular disease. In hyper-pre-β-lipoproteinemia (type IV) xanthoma striatum palmare (or xanthochrimia), and xanthoma papulo-eruptivum are characteristic. Type III has the clinical symptoms of both types II and IV. Xanthomata tuberosum is found with equal frequency in all three types.

Familial Hyperlipoproteinemia Type III

R. Fleischmajer (230 N Broad St, Philadelphia)

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A 43-year-old man and a 61-year-old woman had familial hyperlipoproteinemia type III. Both patients had cutaneous xanthomas and an increase in plasma cholesterol and triglycerides. Electrophoresis of plasma lipoproteins revealed a "broad beta band" (blending with the pre-beta area). Preparative ultracentrifugation at density 1.006 revealed a large fraction of the "beta material" floating in the supernate ($D < 1.006$); 50% to 60% of the plasma cholesterol was found in the very low density lipoprotein fraction. The man responded well to a low-fat diet and chlorophenoxyisobutyrate (CPIB). The woman did not respond to low-fat, low-carbohydrate, and low-cholesterol diets, and also failed to respond to a low carbohydrate-phenformin regimen. Combined low-carbohydrate diet and conjugated-equine estrogen resulted in control of the hyperlipidemia and disappearance of cutaneous xanthomas. The hyperlipidemia also responded well to a low-carbohydrate-CPIB regimen.



SURGERY at the UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE*

*Under the direction of Gilbert Campbell, M.D., Professor of Surgery.

The Surgical Significance of Hyperosmolar Hyperglycemic Non-Ketotic Coma

Bernard W. Thompson, M.D., and Robert E. Casali, M.D.*

The syndrome of hyperosmolar hyperglycemic non-ketotic coma in diabetes came to general attention with its description by Sament and Schwartz[1] in 1957. More than 100 cases have now been reported.[2,3,4] The cardinal features of the syndrome are an elderly person with severe dehydration and depression of the state of consciousness, with hyperglycemia but without evidence of keto-acidosis.

In the earlier cases, precipitating causes were rarely identified and patients seemed to slip into coma following a period of polyuria and thirst. Recently, however, reports of associated, presumably causative events have been accumulating. Among these is administration of certain therapeutic agents or procedures: Corticosteroids,[5] diphenylhydantoin,[6] and hemodialysis or peritoneal dialysis. Additional predisposing factors have been those leading to stress and dehydration such as burns,[7,8] intestinal obstruction, sepsis and pancreatitis. Since the syndrome often ensues during the course of a surgical illness, surgeons must become familiar with the condition. Only an awareness of the syndrome and prompt institution of appropriate treatment will decrease its mortality which is currently reported to be between 41 and 45 percent.[2,3,4]

Case Report

A 78-year-old colored male was admitted to the Veterans Administration Hospital, Little Rock, Arkansas, on 2/27/69 with a three day history of abdominal pain and vomiting. Two days prior to admission the family had noticed that his mental status had deteriorated and he became semi-comatose on the way to the hospital. There was no history of diabetes mellitus.

Physical examination revealed a markedly dehydrated, mentally confused and semi-comatose elderly colored male. Blood pressure 146/90 mm Hg, pulse rate 100 beats per minute. Respirations 18 per minute. The abdomen was distended and the bowel sounds were high pitched. There was an incarcerated right inguinal hernia present. The remainder of the examination was within normal limits. At the time of admission, the hemoglobin was 12.6 gm%, hematocrit 38%. WBC 6,600, BUN 81 mg%, blood glucose 780 mgm%, CO_2 28 mEq/L, chloride 92 mEq/L, sodium 137 mEq/L, potassium 4.6 mEq/L. Serum acetone was a trace. Urinalysis—specific gravity 1.031. Urine sugar 4+. Urinary acetone negative. A repeat blood glucose one hour after admission was reported to be 800 mgm%.

Immediately after admission a nasogastric tube and an indwelling catheter were inserted. After receiving information of the elevated blood sugar the patient was given 20 units of regular insulin intravenously. A repeat blood glucose two hours after admission was 500 mgm%.

During the first four hours following admis-

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sion he was given 3000 ml. of one-half normal saline and began to produce urine. He became more responsive and was taken to the operating room where a spinal anesthesia was given and the incarcerated right inguinal hernia surgically reduced. During the operative procedure he received 1000 ml. of 5% glucose in Ringers Lactate containing 20 units of regular insulin.

In the recovery room the blood glucose immediately following surgery was 450 mgm%. One thousand milliliters of one-half normal saline containing 40 units of regular insulin was therefore given. Four hours following surgery the blood glucose was 128 mgm%, the patient was alert and producing 50 ml. urine per hour. During the next three days he was given 1000 ml. of 5% glucose in one-half normal saline every eight hours. The remainder of the postoperative course was uneventful and the diabetes was controlled on a mild sliding scale. At the present, this man is in a nursing home and his diabetes is controlled on 250 mgm Tolbutamide daily.

Comment

The precipitating factors in this patient's episode of hyperosmolar, hyperglycemic, non-ketotic coma was dehydration subsequent to incarcerated inguinal hernia with severe vomiting and lack of oral fluid intake for three days prior to admission. He gave no previous history of diabetes mellitus. The blood glucose was 800 mgm%, the BUN 81 mgm%, serum CO_2 28 mgm%, sodium 137 mgm% and the serum osmolarity computed using the formula, twice the serum sodium plus blood sugar divided by 18 was 319 mOsm/KgH_2O.[3] Following the rapid administration of hypotonic saline solution, there was marked improvement in his sensorium as well as general condition. Small doses of insulin were used to bring the blood glucose to normal levels and eventually the patient's diabetes was controlled on oral medication.

Discussion

Hyperosmolar, hyperglycemic, non-ketotic coma is most often seen in the fifth through the seventh decades of life and the female to male ratio 2:1. In 65% of the cases reported, this syndrome is the first manifestation of diabetes mellitus.[3] In the classic case, an elderly patient suffering from some acute disease has a change in mentation. This may progress from somnolence to coma and include convulsive disorders. Polydipsia, polyuria, and weight loss are the most common symptoms of this disorder. Severe dehydration is noted on examination and associated fever, tachycardia, and hypotension may be seen. Kussmaul respirations have not been reported in this syndrome. Blood glucose may be 1000 mgm% or higher; serum sodium is usually elevated but may be normal; serum carbon dioxide is normal or slightly depressed; blood urea nitrogen is four to ten times normal; acetone is absent in the urine and serum osmolality ranges between 300 and 500 mOsm/KgH_2O.

One must be sure to differentiate this syndrome from diabetic coma. Diabetic keto-acidosis is recognized by the presence of hyperglycemia and marked serum ketosis. Kussmaul breathing and the odor of acetone on the patient's breath are present as well.

In this syndrome the basis pathophysiologic mechanism is hyperosmolarity, secondary to hyperglycemia with a resulting osmotic diuresis and ensuing dehydration and coma. It has been difficult to explain the absence of ketone bodies in the serum in the face of such elevated blood sugar determinations. Recently immunoreactive insulin has been determined in two patients[9,10] with this syndrome prior to the institution of therapy. In both instances insulin was present but at extremely low levels suggesting beta cell failure. In addition, in patients with severe burns, sepsis, and intestinal obstruction plasma steroids would be expected to be elevated and hence the peripheral antagonism to insulin by glucosteroids must also be considered a factor. If deficient insulin response to extreme hyperglycemia occurs regularly, it might clarify the puzzling lack of ketosis in this syndrome. It has been shown that the amount of insulin necessary to promote glucose transport is ten times that which inhibits fat mobilization.[11] Low plasma insulin may be enough to suppress ketosis but not enough to control blood glucose.

Most authors[1,3,4] agree that fluid volume replacement is the prime need to correct the water deficit that exists. The fluid should consist of one-half strength physiologic saline. This solution will replace electrolytes and water without increasing osmolarity and its accompanying osmotic diuresis. Large amounts of one-half strength saline were used in our patient and the response was rapid. Although potassium was not

used in our patient, hypokalemia may occur and large doses of potassium may be necessary. Insulin requirements of 1000 units have been reported but some patients with this syndrome are markedly sensitive to it.[12] It is therefore wise to use a relative low dose initially as a test of the patient's responsiveness.

The prognosis in hyperosmolar, hyperglycemic, non-ketotic coma is poor. This is apparently related to the delayed recognition of this syndrome and in some cases inadequate therapy.

Summary

Hyperosmolar, hyperglycemic, non-ketotic coma may develop in elderly patients with associated acute surgical emergencies. The characteristics of the syndrome are outlined. Early recognition of the syndrome and adequate fluid replacement with hypotonic saline and judicious use of insulin will improve the previously reported poor survival rates.

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The Etiology of Uric Acid Urolithiasis Following Ileostomy

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Arch Surg 99:421-423 (Oct) 1969

Uric acid excretion was determined in three patients with established ileostomies and uric acid calculi. Excessive ileostomy loss and diminished urinary output occurred during ad-lib oral intake. Fixed base loss from the gastrointestinal tract resulted in excretion of a persistently acid urine with absence of expected morning and postprandial "alkaline tides." Administration of intravenous fluids promptly reestablished adequate urinary output, increasing creatinine and uric acid clearance, and decreasing urine uric acid concentrations. Persistent urine acidity and high urine uric acid concentration are the factors predisposing the ileostomy patient to uric acid urolithiasis.

Histidine Decarboxylase Inhibitors and Second-Set Allograft Survival

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In prior studies a marked increase in histidine decarboxylase (HDC) enzyme activity of allografted rat skin had been found during rejection. In this study of HDC inhibitors and second-set rat skin allograft survival, semicarbazide plus pyridoxine-deficient diet was used for inhibition. Second-set allograft survival could be prolonged significantly when the inhibitors were used during both first- and second-set allografting but not when used during second-set grafting only. Permanent survival of second-set grafts was achieved in approximately 10% of animals treated with inhibitors during both graftings. These grafts were not altered by elimination of HDC inhibitation nor by subsequent placement and prompt rejection of third-set skin allografts.

RADIOLOGY CASE OF THE MONTH

Prepared by the
Department of Radiology, University of Arkansas
School of Medicine, Little Rock

Answer on Page 253

By James S. Garrison, M.D.



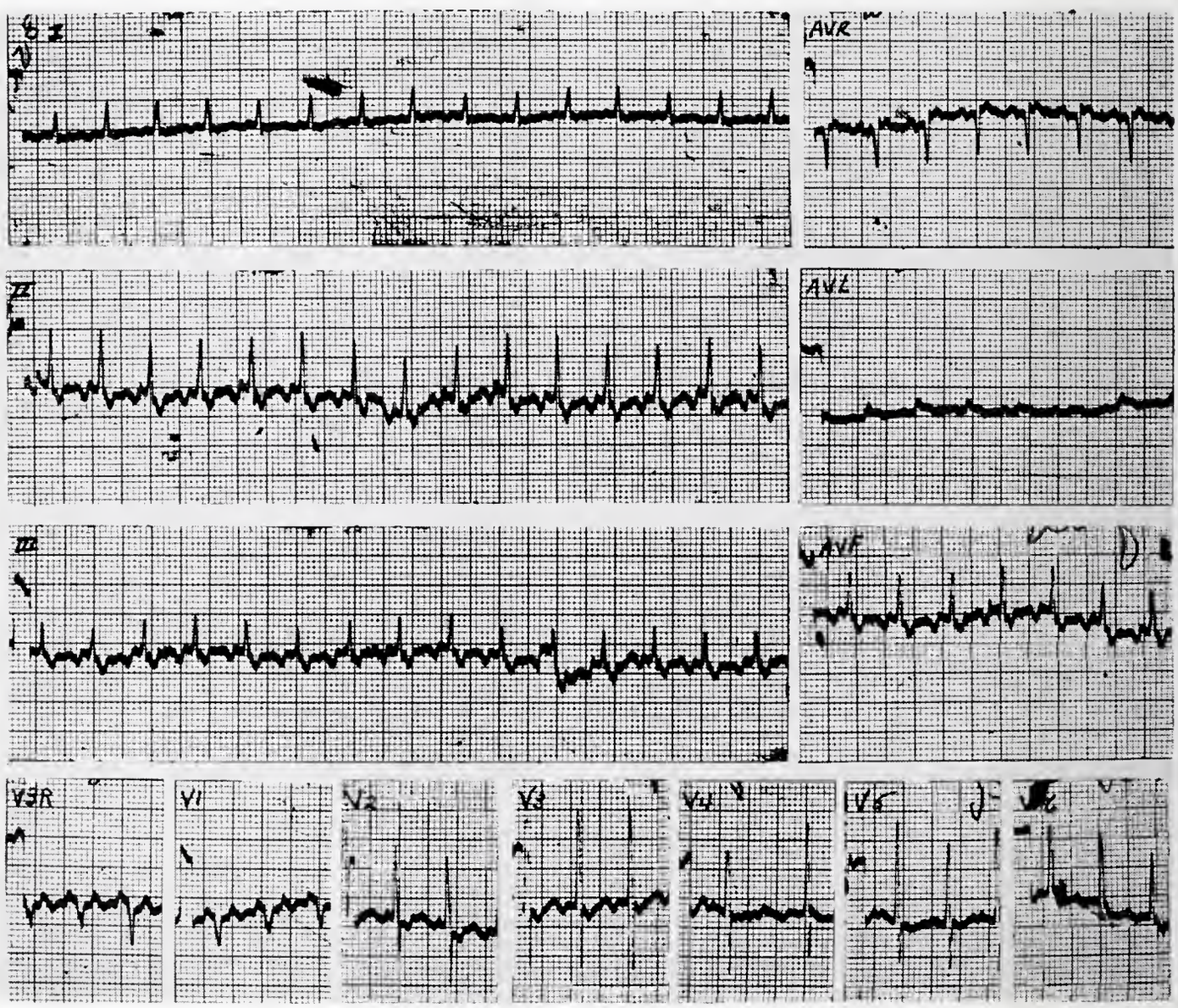


HISTORY AND PHYSICAL EXAMINATION: This 23-year-old male had the above radiographic examinations performed during the course of a college entrance physical examination. On the day previous to the examination, he underwent a mandibular third molar tooth extraction where an air turbine dental drill was employed. During and after the procedure, he noted swelling in the left facial and neck regions. No unusual associated discomfort was experienced. Crepitance was present on palpation of the left facial, cervical, and supraclavicular regions.

ELECTROCARDIOGRAM OF THE MONTH

AGE: 63 SEX: Male BUILD: Slender BLOOD PRESSURE: 132/84
CARDIAC DIAGNOSIS: Tachycardia, type?
OTHER DIAGNOSES: Bronchogenic carcinoma.
MEDICATION: Digitalis; amount not known.
HISTORY: Evidence of bronchogenic carcinoma with atalectasis right lung and mediastinal shift.

ANSWER ON PAGE 253



The Department of Medicine, University of Arkansas Medical Center
James S. Taylor, M.D., Professor of Medicine

Emergency Care Training

The Arkansas Department of Health in cooperation with the National Highway Safety Bureau is conducting training courses in order to upgrade quality of emergency care rendered by emergency personnel such as ambulance attendants, policemen, firemen, industrial safety engineers, and others who may be faced with the problem of rendering emergency care. This course is approximately 20 hours in length which contains lectures and demonstrations.

The first such course was held in Pine Bluff through the cooperation of the Jefferson County Medical Society and the Pine Bluff Health Center. Physicians of the Jefferson County Medical Society served as instructors for the course.

It is the desire of the Division of Safety of the Arkansas State Department of Health to offer this course throughout the state through the cooperation of the local medical societies. In as much as less than 20% of the ambulance personnel in the State of Arkansas have had any kind of first aid training, it is felt that it is imperative that such training be provided in as many areas of the state as is possible. It is highly desirable that the course uniformity be carried out throughout the state in anticipation of a state licensure law as required by the National Highway Safety Act. The Division of Safety of the State Health Department invites the request of physicians to discuss plans for a course in their area. Below is an outline of the course, as suggested by the Arkansas State Department of Health.

First Day

WELCOME
SITUATIONS CALLING FOR RAPID TRANSPORTATION
MANAGEMENT OF FRACTURES
BLEEDING, SHOCK, AND OPEN WOUNDS
COMMON MEDICAL EMERGENCIES
ARTIFICIAL RESPIRATION AND CARDIAC MASSAGE
CARDIAC EMERGENCIES
FILM, "HANDS OF ACTION"
DRUG OVERDOSAGES AND POISONS
ELECTRICAL EMERGENCIES AND INJURIES
PEDIATRIC EMERGENCIES

Second Day

FACIAL AND HEAD INJURIES
EYE INJURIES
CHEST AND ABDOMINAL INJURIES
FILM, "EMERGENCY CHILDBIRTH"
BURNS
PSYCHIATRIC PATIENTS
LEGAL ASPECTS OF EMERGENCY CARE
MINIMUM EQUIPMENT FOR AMBULANCES
THE EFFECTIVE PROFESSIONAL AMBULANCE ATTENDANT

Third Day

SNAKE BITES
DEMONSTRATION AND PRACTICE ON RESUSI-ANNE
DEMONSTRATION AND PRACTICE ON SPLINTING AND BANDAGING
SAFE DRIVING OF EMERGENCY VEHICLES
QUIZ
CRITIQUE
AWARD CERTIFICATES

Reduction of Lumbar Disc Prolapse by Manipulation

J. A. Mathews and D. A. H. Yates (St Thomas' Hosp, London)

Brit Med J 3:696-697 (Sept 20) 1969

Five patients with acute lumbago were examined by epidurography, a radiological technique using epidural injections of water-soluble contrast medium. Small disc protrusions were demonstrated in these five patients, two of whom are presented in detail. All symptoms and signs were relieved by lumbar manipulation, and further comparable x-rays demonstrated reduction in size of the disc protrusions. These changes were not demonstrable in control subjects.

RESOLUTIONS



Resolution From Union County Medical Society Regarding Medicare Guidelines

WHEREAS, it has come to the attention of the Union County Medical Society that Blue Cross and Blue Shield, Inc., acting under Medicare Guidelines, has recently refused to allow medical expense claims in certain Medicare cases and has required specific itemization of the exact type of injected medication used in the treatment of some patients, and

WHEREAS, the method of implementation of this guideline is such that it places an undue and unfair imposition and burden on the patient to bear the responsibility of securing confidential medical information from their physician in order to in turn, disclose the type of medicine used to the Medicare carrier, and

WHEREAS, authority for revealing this information by the psysician is considered by Medicare Service to be the general authorization signed routinely by Medicare beneficiaries on claim forms, and does not require a specific directive to the physician releasing him from possible ethical indiscretion in submitting the specific type of medication to a third party, and

WHEREAS, it has now been demonstrated by recent denial of claims by Blue Cross and Blue Shield, Inc., that if the patient wishes his privacy protected and confidential information withheld, the reimbursement to him under the law would be disallowed, and

WHEREAS, it has also been demonstrated that a physician is to be denied payment for treatment on an assignment basis if he attempts to protect the patient's privacy at the patient's request, and

WHEREAS, the initial enforcement of this regulation is being done in a grossly discriminatory manner by requiring only a few individual physicians to comply, as well as producing harassment in the form of writing the term "investigated" across the letterhead of physicians' bills which had been returned to the patients for their consideration, thereby promoting doubt by the patient as to the physician's integrity, and

WHEREAS, The Union County Medical Society is alarmed that such action taken against two of its members represents a threat to the group as a whole in that it may become a universal practice, and

WHEREAS, an ethical dilemma now exists in regard to the physicians being required by Federal Guidelines to release professional and confidential medical information to non-professional insurance carrier personnel, even though this action constitutes an unethical act as defined by the medical practices act of Arkansas and can be the cause for revocation of a State Medical license, and

WHEREAS, patients had been notified of this requirement to itemize the specific medicines used by injection, yet no prior announcement of policy in regard to these new guidelines had been given to physicians, and

WHEREAS, we realize that isolated cases of abusive charges by physicians had prompted these guidelines, we also recognize that usual and customary methods of procedure already exist through local medical grievance committees and the judicial system for the purpose of clarifying and judging these questions in regard to physicians' charges as they apply to patients and third party contracts, yet Blue Cross and Blue Shield, Inc., has not seen fit to utilize these usual standard mechanisms, and

WHEREAS, there is no stated policy implied or asserted in regard to the definition of "necessary" use of medication as stipulated in the Medicare law, and the continued enforcement of this guideline by Medicare carriers can only lead to the determination by non-professional third party staffs of what medications are medically necessary or indicated and thereby, through economic control, establish what would be allowed in the specific treatment of patients by physicians,

BE IT RESOLVED, that the Union County Medical Society hastens to protest strongly this action by Arkansas Blue Cross and Blue Shield, Inc., and considers it discriminatory harassment in its implementation, a threat to all physicians' integrity, an invasion of the patients' right to privileged information, subjecting of the physician to an ethical dilemma, and a threat to the established high standards of medical care by providing this means of dictatorial control over the patients' treatment by non-professional government authorities, and

BE IT ALSO RESOLVED, that the Union County Medical Society strongly urges the immediate withdrawal of such new guidelines from the Department of Health, Education and Welfare regulation and that difficulty in regard to

abusive physicians' charges submitted to Medicare be handled through the established customary and usual routes of procedures which include local medical grievance committees and the judicial system.

Mrs. Charles F. Wilkins, Jr.

WHEREAS, Mrs. Charles F. Wilkins, Jr., of Russellville, responded to the plea of the Medical Society that qualified people seek election as delegates to the Constitutional Convention and was duly elected to the position, and

WHEREAS, serving as delegate to the Constitutional Convention required many hours of work away from home, and

WHEREAS, Mrs. Wilkins was alert and responsive to the wishes of the Arkansas Medical Society regarding items considered by the Convention, and

WHEREAS, Mrs. Wilkins has served most effectively as a member of the Constitutional Convention and has demonstrated her unselfish devotion to the good of Arkansas,

NOW, THEREFORE, BE IT RESOLVED, that the Arkansas Medical Society express its gratitude to Mrs. Wilkins and commend her for her continuing dedication to the medical profession and to the State.

ADOPTED: Council of the
Arkansas Medical Society
October 26, 1969



Hyperoxygenation Effect on Cognitive Functioning in the Aged

E. A. Jacobs et al (VA Hosp, Buffalo, NY)
New Eng J Med 281:753-756 (Oct 2) 1969

Thirteen elderly male patients with measured cognitive deficits were treated with 30 intermittent exposures to 100% O_2 at 2.5 atmospheres absolute. Five controls, each exposed at the same time and in the same manner as a paired experimental patient, breathed a low oxygen mixture that maintained essentially normal alveolar oxygen tension despite increased ambient pressure. Blood gas analysis showed the expected large intra-exposure increase in arterial oxygen tension among the experimental patients. Negligible changes in arterial oxygen tension were found among control patients. Post-treatment performance on psychological tests of cognitive functioning showed highly significant gains over pre-treatment levels in experimental patients, suggesting an improved performance which persisted beyond the temporary increase in arterial oxygen tension levels. Control patients showed no improvement in post-treatment cognitive functioning.

Deficient Thiamine Pyrophosphate and Blood Alpha-Ketoglutarate-Pyruvate Relationships During Febrile Human Infections

V. E. Gilbert, M. C. Susser, and A. Nolte (VA Hosp, Pittsburgh)
Metabolism 18:789-799 (Sept) 1969

Utilizing erythrocytic transketolase, deficient thiamine pyrophosphate (TPP) was observed in 23 of 48 febrile infected patients. Deficiencies as severe (46% to 56%) as those reported by others in Wernicke's and beriberi heart diseases were observed in this study. Twelve patients were free of underlying diseases which indicated that infection per se could induce this deficiency. Deficiencies occurred in patients who were debilitated by other diseases. Patients such as these probably should receive supplemental thiamine since deficiency of TPP is a reversible biochemical lesion. Blood α-ketoglutarate frequently was increased during infections and was a good metabolic indicator of the resolving infected state. The spontaneous decrease of α-ketoglutarate and pyruvate negated attempts to demonstrate an in vivo metabolic block via thiamine-responsive reductions of these metabolites.



EDITORIAL

Human Growth Hormone

Alfred Kahn, Jr., M.D.

With more sophisticated means of studying minute amounts of chemicals in biological preparations, our knowledge of the growth hormone of the pituitary gland is being greatly increased. The Journal of Clinical Endocrinology and Metabolism has had a series of articles on this hormone.

Yen, Samaan, and Pearson (volume 27, page 1341, September, 1967) have studied the growth hormone levels in pregnancy. In this report, the authors used a radio-immunoassay and examined venous blood samples from 48 pregnant women. Blood samples were serially taken in most cases. They found that the growth hormone levels in the trimesters of pregnancy were 5 units per cc, 6.5 units per cc, and 5 units per cc as compared to 3.1 units in the non-pregnant women. The authors felt that the difference between the pregnant levels and the non-pregnant levels were not statistically significant due to interference by human placental lactogen in the pregnancy samples. Human growth hormone was high in cord blood. Insulin induced hypoglycemia in 8 non-obese pregnant patients produced a decline of about 47% in blood sugar level, and a significant rise in human growth hormone level. Glucose administration in 8 subjects tended to produce no change in growth hormone level; this is in contrast to the non-pregnant state where a decline usually occurs. Walking tends to cause an increase in growth hormone levels, too.

Frohman, Aceto, and MacGillivray (volume 27, page 1409, October, 1967) have studied and reported on "Studies of Growth Hormone in Children:—Normal Hypopituitary and Constitutionally Delayed." The authors were seeking an accurate method of differentiating children with idiopathic growth hormone deficiency, who are normal in all respects but lack one or more trophic pituitary hormones from children with constitutionally delayed growth (these children will eventually grow whereas the former will not), and from children with central nervous system disease in whom the pituitary-hypothalamic relationship is damaged. The studies included work with 5 children with pituitary-hypothalamic dysfunction, 7 children with idiopathic growth hormone deficiency, and 4 children with a constitutional delay in growth. The children were tested fasting, and after three agents known to stimulate the production or release of growth hormone:—Arginine, insulin, and Piromen (Pseudomonasendotoxin). Growth hormone was measured by radio-immunoassay using I-131 and a double antibody precipitation method. Using this technique, the normal children all had at least one assay out of several with a growth hormone level-over 6 units per cc; the samples varied in hormone content. In children with hypothalamic pituitary dysfunction, the values were below 1 unit. Children with true growth hormone deficiency had values under 4 units and averaged 2.4 units as a maximum. Children with a constitutional delay in growth had hormone values of 6 units or more. Insulin almost invariably invoked an increase in growth hormones in normal children, although it was variable. There was no increase in the pituitary-hypothalamic dysfunction group; the constitutional delay in growth had an increase in growth hormone after insulin; in the idiopathic growth hormone deficiency, the response was poor and delayed. The response to arginine was similar to insulin; as was that of Piromen, but in the latter there was no significant pyrogenic response as in adults.

Using radio-immunoassay, employing I-131

and a precipitating goat, anti-rabbit gamma globulin, Garcia, Linfoot, Manougian, Born, and Lawrence studied growth hormone levels in Acromegalic patients and compared them to normal individuals' levels. They point out that plasma growth hormone is very labile, and the levels are also affected by many stimuli as other endocrine levels, etc. Taking these factors into consideration, Assays were run on 18 normal males, 14 normal females, 4 women treated with estrogen and progestin, and 25 acromegalic patients. The normal males had a range of 0.19 to 1.23 units per cc, the normal females had a range of 0.10 to 14.6 units per cc with an average of 1.86 units per cc. Women taking cylcic hormone therapy had an average 7.57 units with a range of 0.23 to 23 units. Acromegalic patients had a range of 5 to 176 units with an average of 35 units. Treatment to the acromegalic group effected a reduction of plasma growth hormone to 74% of pretreatment value. This fall may require "considerable time to reach low levels following alpha particle irradiation to the pituitary." The authors pointed out again that plasma growth hormone in women tends to be higher than men and shows great variation; oral contraceptives increase plasma growth hormone levels; it is also possible that prolactin may interfere with the measurement of growth hormone.

Using radio-immunoassay Goodman, Grumbach, and Kaplan (New England Journal of Medicine, volume 278, page 57, January 11, 1968) studied 35 patients with divartism to determine if their growth failure was the result of sole deficiency of human pituitary growth hormone or if the growth hormone deficiency was accompanied by deficiency of other pituitary hormones. Pure deficiency of growth hormone was found in 16 of these patients whereas 19 had multiple deficiencies. In these studies, not alone were simple assays made but provocative tests were also used—as the insulin tolerance test, arginine infusions, etc. The authors concluded that the clinical appearance of dwarfs could not be used as a reliable method of differentiating the different types of dwarfism. In isolated growth hormone deficiency some of the following characteristic features were noted: normal pregnancy, normal birth weight, variable age of growth failure, continued growth at a reduced rate, round doll like facies, height more retarded than weight, bone age less than height age, synystomatic hypoglycemia, low fasting growth hormone level, both fasting and after provocative test, growth acceleration by growth hormone, delayed puberty rate acceleration after therapy, etc. Patients with pure growth hormone deficiency should be watched for a later onset of multiple pituitary hormone deficiencies. Lastly, they point out these conditions may be familial or sporadic.

The units referred to in this discussion are milli micrograms per cc, thus underscoring the extremely small amounts of these substances, and the great refinements in the methods used by the authors.

ANSWER—Electrocardiogram of the Month

A: 340
RATE: V: 170 RHYTHM: Atrial Tachycardia c 2:1 block
PR: .... sec. QRS: .06 sec. QT: .26 sec.

SIGNIFICANT ABNORMALITIES:

P waves abnormal in direction, rate 340, c ventricular rate 170.

INTERPRETATION: Abnormal

Paroxysmal atrial tachycardia c 2:1 block except in lead V_4.

ANSWER—What's Your Diagnosis?

DIAGNOSIS:

Pneumamediastinum; facial, cervical, and left supraclavicular saft tissue emphysema.

DISCUSSION:

A chest radiagraph shaws extensian af the air inta the mediastinum and left supraclavicular regians. A lateral neck radiagraph shaws air dissectian a'ang the facial and cervical fascial planes.

Facial and cervical saft tissue emphysema may accur during dental extractian when a high speed air turbine dental drill with a fine water spray is emp'ayed. This is mast likely ta happen when the drill is used after the gingiva has been separated fram the taath. Mast af the air comes back a'ang the drill hand piece and exits autside the mauth, however the water spray may divert same af the air taward the drill paint. This air may be farced inta the space be'ween the gingiva and the taath resulting in d'ssec.ian af the air alang the cervical fascial planes inta the med'astinum and subcutaneaus tissues af the face, neck, and supraclavicular regians. Subjective awareness af swelling in these latter regians is present immediate'y. Usually na untaward discamfart is experienced. The mediastinal and subcutaneaus air is absarbed within farty-eight ta seventy-twa haurs. Uneventful recavery is anticipated; hawever, clase abservatian af the patient is required. Antibiatic therapy is emplayed as indicated.

REFERENCE:

1) Hunt, Rabert B., and Sahler, Otta D.: Media tinal Emphysema Praduced by Air Turbine Denta' Dril s. JAMA 205:241, 1968.



OBITUARY

Dr. Howard Allen Rands

Dr. Howard Allen Rands of Dumas died October 21, 1969. He was born July 23, 1895, in Toronto, Canada.

Dr. Rands was educated at Valparaiso, Indiana University and the University of Arkansas School of Medicine. He served his internship at St. Vincent Infirmary and a residency at the Missouri-Pacific Hospital, both in Little Rock.

Dr. Rands settled in Dumas in 1932 where he practiced medicine until his recent retirement. He was a member and former president of the Southeast Arkansas Medical Society and a member of the Arkansas Medical Society, the American Medical Association, and the Southern Medical Society.

Survivors include his wife, Frances Fuqua Rands, a daughter, and a son.

* * *

Dr. J. A. Martin

Dr. J. A. Martin of Lake City, formerly of Cabot and Jonesboro, died October 16, 1969. He was 88 years of age.

Dr. Martin received his medical degree from the University of Tennessee School of Medicine, located in Memphis, in 1914. He had practiced medicine in Arkansas for some fifty-five years and was a member of the Lonoke County and Arkansas Medical Societies, and the American Medical Association.

He is survived by his wife, a son, two daughters, and five grandchildren.



PERSONAL AND NEWS ITEMS

TO: All Readers of the Journal of the Arkansas Medical Society

FROM: The Arkansas Tuberculosis and Respirateory Disease Association

Arkansas Tuberculosis and Respiratory Disease Association asks your cooperation in publicizing the 1969 Christmas Seal Campaign which opens November 12.

More and more attention is needed to provide education and advanced research for tuberculosis, emphysema, chronic bronchitis and other lung diseases. Proceeds from the annual Christmas Seal contributions are our sole means of providing such services.

Dr. Walker Attends Meeting

Dr. A. T. Walker of Mammoth Spring attended the Annual Scientific Assembly of the American Academy of General Practice in Philadelphia. The four-day meeting offered twenty-eight guest speakers and forty clinical seminars to those present.

Dr. Massey Injured

Dr. L. D. Massey, longtime Osceola physician, suffered serious injuries on the night of October 15th when the ambulance in which he was accompanying a patient to a Memphis hospital was struck by a car just east of the Memphis and Arkansas bridge. Our sympathy and wishes for his speedy recovery and return to practice are extended.

State Leadership Conference on Smoking And Health; Four Arkansas Medical Society Members Participate

A state conference on smoking and health was held recently in Arkadelphia under the auspices of Henderson State College. A major segment of the program was provided by four members of the Arkansas Medical Society. Dr. Jack Kennedy of Arkadelphia presided over one portion of the one-day session while three major speeches were made by the following:

Dr. H. W. Thomas of Dermott—"Smoke Now, Pay Later."

Dr. Ronald McNichol of Benton—"Behavioral Aspects of Smoking."

Dr. David S. Bachman of Russellville—"Toward a Smokeless Generation—Why?"

The Arkansas Medical Society was also active on the arrangements committee for the meeting, cooperating with Michael O'Quinn, Ph.D., of the Henderson State College faculty in the program's planning.

Dr. Whittaker Guest Speaker

Dr. L. A. Whittaker, Public Health Administrator, Sebastian County, was the guest speaker at a training meeting for Extension Homemakers health leaders in Fort Smith. His topic was "Use and Abuse of Drugs".

Dr. Weber Elected

Dr. Charles H. Weber of Magnolia has been elected to active membership in the American Academy of General Practice.

Dr. Felts Made Trustee

Dr. W. R. Felts, Jr., formerly of Judsonia has been elected a trustee of the American Society of Internal Medicine. He will serve a three year term on the nine-member Board of Trustees. Dr. Felts now resides in Washington, D. C.

Dr. Rasch Named Boss of the Year

Dr. James Robert Rasch was recently named "Boss of the Year" by the Pulaski County Medical Assistants Society. The award was made by the organization at its annual Bosses Night Banquet at the Little Rock Country Club.

Dr. Lincoln Guest Speaker

Dr. Ben M. Lincoln was recently the guest speaker at a meeting of the Southwest Little Rock Jaycettes. He discussed "Why Heart Attack and Why Stroke?" Dr. Lincoln is a member of the board of directors and is a past-president of the Arkansas Heart Association.

Dr. Nettles Resigns

Dr. John B. Nettles has moved from Little Rock to Tulsa where he is director of that city's Obstetrics-Gynecology program and also director of Graduate Education at Hillcrest Hospital. In addition, he has a full faculty appointment at the University of Oklahoma at Oklahoma City. Our best wishes for success in his new positions go with him.

Listing of Short-Term Training for Laboratory Workers Sought

The Laboratory Consultation and Development Section of the National Communicable Disease Center is compiling a list of organizations which offer short-term training for persons working in clinical and public health laboratories. Academic training for full-time students will not be included. When completed, the list will be made available to all individuals interested in continuing education for laboratory personnel. The compilation will serve to alert training coordinators, supervisors, and prospective students to the existence of many little-known sources of short-term training, some at no cost to the student.

Companies, professional associations, individuals and schools who desire to furnish information for inclusion in the listing should write:

National Communicable Disease Center
Attention: Mr. John H. Krickel
Education Specialist
Laboratory Division
Atlanta, Georgia 30333

No information will be included in the published list without prior clearance from the organization or individual offering the training.

Council Minutes, Arkansas Medical Society
Sunday, October 26, 1969
Sam Peck Hotel, Little Rock, Arkansas

The Council of the Arkansas Medical Society met at 12:00 noon on Sunday, October 26th, at the Sam Peck Hotel in Little Rock. Present were: Wood, Fowler, Kennedy, Shuffield, Saltzman, Fairley, Raney, P. Gray, Bell, D. Gray, Lazenby, Irwin, Wynne, Kemp, Bethel, P. Kolb, Kirby, Applegate, Koenig, Long, Thomas, Snodgrass, J. Kolb, Norton, Chudy, Kahn, Johnston, George Burton, David Yocum, Reuben Setliff, R. M. Lewis, J. W. Harper, Larkin Wilson, Jacob Ellis, J. S. McKinney, John Herron, Winston Shorey, Harry Hayes, George Mitchell, Mr. Ken Payne, Mr. Don Thompson, Mr. Paul Harris, Mr. Ed Rensch, Mr. J. Castle, Mr. F. Fagler, Mr. Eugene Warren, Mr. Paul Berry and Mr. Paul Schaefer.

The Council transacted business as follows:

I. Upon the motion of Saltzman and Koenig, the Council voted to make the

members of the Executive Committee of the Council automatically members of the 21-man Fee Committee for the terms of their office on the Executive Committee.

II. Harry Hayes, Jr., suggested that members of the Fee Committee be rotated in a manner similar to the rotation of regular constitutional committees. James M. Kolb pointed out that the 21-Man Fee Committee is a Council committee and that the appointments to the committee may be changed at any time. Upon the motion of Koenig and Kemp, the Council voted to leave the appointments to the 21-Man Fee Committee up to the Chairman of the Council.

III. Harry Hayes suggested that legislation be introduced allowing single practitioners to form professional associations. Mr. Warren reported that legislation allowing one man to incorporate will be introduced in the next session of the Legislature.

IV. Mr. Fagler and Mr. Castle of PRO Services, Inc., proposed a group retirement plan for the Medical Society under the Keogh legislation. Upon the motion of Shuffield and Saltzman, the proposal was referred to the insurance committee for its recommendation.

V. Upon the motion of Applegate and Long, the Council nominated Dr. Theodore C. Panos to attend a White House Conference on Food and Nutrition to be held in Washington, D. C., December 2-4.

VI. Upon the motion of Saltzman and Long, the Council adopted a resolution commending Mrs. Charles F. Wilkins, Jr., for having been elected and having served as a member of the Constitutional Convention. The motion directed that the resolution be published in the Journal of the Arkansas Medical Society.

VII. Upon the motion of Koenig and Kemp, the Council approved Executive Committee action changing Mr. Warren's retainer arrangement to $4,000 per year whether the Legislature is meeting or not.

VIII. Mr. Warren reported on the Executive Committee's meeting with the Insurance Commissioner, Mr. Allen Horne. Mr. Horne offered to assist in establishing a medical-legal screening panel for threatened malpractice liability claims. Mr. Warren stated that the Society headquarters, the Executive Committee and he would follow the matter closely with the insurance commissioner.

IX. Upon the motion of Kemp and Fairley, the Council voted not to approve accepting advertising and commercial exhibits from Medi Card, Inc.

X. The matter of presenting a resolution to the American Medical Association requesting that all resolutions to be considered by that body be submitted thirty days prior to the opening of the meeting was discussed. It was decided to take no action on the suggestion.

XI. Joseph Norton reported on the successful Emergency Health Services Conference held in Little Rock in August and co-sponsored by the Society. He expressed the hope that the Society would continue its leadership in the program. Dr. Norton submitted his resignation as chairman of the Committee on Emergency Health Services. Upon the motion of Kemp and Saltzman, R. M. Bransford of Texarkana was nominated chairman of the committee to replace Dr. Norton.

XII. Jacob Ellis of the Union County Medical Society read a letter decrying the influence of third parties on the ethical relationship between physicians and patients and offered a list of seven recommendations to remove these influences. Larkin Wilson then read a resolution from the Union County Medical Society regarding Medicare guidelines which is made a part of these minutes. Upon the motion of Wynne and Kemp, the Council voted to refer the Union County resolution back to the Executive Committee for consideration and further recommendation to the Council.

XIII. The chairman advised the Council that the Legislative Council has asked the Medical Society to cooperate in studying the problems of the unlawful use of marijuana, narcotics and hallucinogenic

drugs in the State, and to assist in developing a state-wide program of publicity to awaken the people, especially the young people, to the serious dangers in the use of such drugs. The Legislative Council also invited the Medical Society to participate in hearings on the subject to be held at the State Capitol on November 21st. Upon the motion of Shuffield and Koenig, the Council voted to approve the educational program and to appoint a committee, including Mr. Warren, to meet with the Legislative Council regarding legislation and education.

XIV. Mr. Warren reported on a meeting of the Legislative Council attended by officers of the Medical Society, where the Osteopathic Association suggested a review of Arkansas laws to broaden the privileges of osteopaths in the State. The Council voted to instruct legal counsel and the legislative committee to oppose broadening of the privileges of osteopaths.

XV. James M. Kolb stated that he wished to appeal a ruling of the 21-Man Fee Committee on a claim he had submitted for surgery on a Medicare case. The Council voted to ask the Executive Committee to review the case and refer it back to the 21-Man Committee and, finally, to ask the 21-Man Committee to report its findings to the Council.

XVI. Chairman Wood called an Executive Session of the Council to discuss personnel matters. During the Executive Session, the Council approved the purchase of a group life insurance program for employees of the headquarters office, which could be made without additional cost to the Medical Society as a result of savings on the retirement program. Motion by Wynne and Koenig.

XVII. Upon the motion of Long and Koenig, the Council voted to request the chairman to appoint a committee to review the retirement program for headquarters employees.

XVIII. Dwight Gray discussed the VISTA program in Lee County, warning the Council of unfavorable developments which had become apparent there.

XIX. Upon the motion of Applegate and Kemp, the Council voted to write George Mitchell commending him for his work, patience, and diplomacy as medical director of Arkansas Blue Cross-Blue Shield, administering Medicare, CHAMPUS, and "usual, customary and reasonable" fees under private programs.

The Council adjourned at 4:30 P.M.

APPROVED: John Wood, M. D., Chairman



NEW MEMBERS

The White County Medical Society welcomes four new names to its membership roll. They are Dr. John Elliott Bell, Dr. Henry C. Farrar, Dr. David M. Johnson, and Dr. William Dale Morris.

* * *

DR. JOHN ELLIOTT BELL, from Camden, received his pre-medical training at the University of Arkansas. In 1961, Dr. Bell graduated from the University of Arkansas School of Medicine. His intership was done at the University of Arkansas Medical Center and a residency also completed in its Department of Radiology.

Dr. Bell served in the Arkansas National Guard from 1958 until 1969. He comes to Searcy, where his type of practice is Radiology, after three years of practice in Quanah, Texas. His office address is 112 West Center in Searcy.

* * *

DR. HENRY C. FARRAR is a native of Nashville, Tennessee. His pre-medical education was done at both Harding College and the University of Tennessee, receiving his B.A. and M.S. from the latter in 1949 and 1950 respectively.

Dr. Farrar was a 1954 graduate of the University of Tennessee School of Medicine and completed an internship at Tampa Municipal Hospital, Tampa, Florida, in 1955. He has done

residencies at the Miners Memorial Hospital, Harlan, Kentucky, and City Hospital in Winston-Salem, North Carolina.

Prior to settling in Searcy, Dr. Farrar spent two years with the United States Public Health Service and three years with the Nigerian Christian Hospital in Nigeria, Africa. He is a board certified general surgeon and a Fellow American College of Surgeons. His office is located in the Medical Arts Center, 1407 East Race Avenue, Searcy.

* * *

DR. DAVID M. JOHNSON hails from Springfield, Missouri. His pre-medical education was obtained at both Arkansas State University and the University of Arkansas. Dr. Johnson graduated from the University of Arkansas School of Medicine in 1965. He interned at University Hospital in Little Rock. From 1966 through 1969, Dr. Johnson was a resident in Internal Medicine at the University of Arkansas Medical Center, serving in 1969 as Chief Resident for that department.

Dr. Johnson holds the rank of captain in the Arkansas Army National Guard. His type of practice is Internal Medicine and his office is Medical Arts Center, 1407 East Race Avenue, Searcy.

* * *

DR. WILLIAM DALE MORRIS is from Little Rock. He attended Abilene Christian College in Abilene, Texas, where, in 1961, he received his B.S. in chemistry. Entering the University of Arkansas School of Medicine in the fall of 1961, Dr. Morris was graduated in 1965. Upon graduation, he completed an internship at Wilford Hall, United States Army Hospital, San Antonio, Texas.

Dr. Morris comes to Searcy after three years active duty with the United States Air Force. He is engaged in general practice with his office located at 910 East Race Avenue.

* * *

Jefferson County Medical Society has welcomed three new members to its ranks in recent months. They are Doctors John Wayne Buckley, James Frank Clark, Jr., and Clarence McNew Rittelmeyer.

DR. JOHN WAYNE BUCKLEY, a native of Pine Bluff, has recently returned to practice in his hometown. He received his B.A. from the University of Arkansas in 1958 and his M.D. from the University of Arkansas School of Medicine in 1962.

Dr. Buckley interned at the University of Arkansas Medical Center and completed a residency at Baylor University School of Medicine in Houston where he also held a teaching appointment.

Dr. Buckley served three years as a captain in the United States Air Force. His type of practice is Otolaryngology with offices located at 1714 Doctors Drive in Pine Bluff.

* * *

DR. JAMES FRANK CLARK, JR., was born in Little Rock. His pre-medical education was obtained at the University of Notre Dame where he received his B.S. in 1959. He was a 1962 graduate of the University of Arkansas School of Medicine and interned at Charity Hospital, New Orleans, Louisiana.

Dr. Clark did his residency at the University of Texas Medical Branch in Galveston, Texas, after serving two years with the United States Air Force.

Dr. Clark's specialty is Pathology. He is a member of the American Society of Clinical Pathologists and the College of American Pathologists. His office address is 1515 West 42nd Avenue, Pine Bluff.

* * *

DR. CLARENCE McNEW RITTELMEYER is also a native of Pine Bluff. He has returned to his hometown after practicing three years in Longview, Texas.

Dr. Rittelmeyer received his B.S. degree from Tulane University and was a 1959 graduate from that University's School of Medicine. His internship was done at Tovro Infirmary in New Orleans and a residency completed at Confederate Medical Center in Shreveport, Louisiana. Dr. Rittelmeyer is a Candidate, American College of Surgeons and his type of practice is general surgery. His office address is 1716 West 42nd, Pine Bluff.



BOOK REVIEWS

BACTERIAL EPISOMES AND PLASMIDS, G. E. W. Wolstenholme and Maeve O'Connor, illustrations are numerous, published by Little, Brown and Company, Boston, Massachusetts, September 23, 1969.

CIRCULATORY AND RESPIRATORY MASS TRANSPORT, G. E. W. Wolstenholme and Julie Knight, numerous illustrations, published by Little, Brown and Company, Boston, Massachusetts, September 23, 1969.

TEXTBOOK OF PEDIATRICS, Waldo E. Nelson, M.D., Victor C. Vaughan, III, M.D., and R. James McKay, M.D., illustrations, pp. 527, published by W. B. Saunders Company, Philadelphia, London and Toronto, August 28, 1969.

This is a well recognized Textbook of Pediatrics now in its ninth edition. It is very authoritative and complete. It is a compendium of articles written by various outstanding Pediatric authorities. The text is well illustrated; it has numerous charts; it has good reference tables, and is highly recommended to medical students, general physicians and pediatricians.



Obstruction of the Small Intestine

S. E. Davis and L. Sperling (Univ of Calif Medical Center, Los Angeles)
Arch Surg 99:424-426 (Oct) 1969

One hundred and fifty-two operative procedures were performed, and postoperative adhesions in 108 patients (71.2%) were by far the most common cause of obstruction. Metastatic or recurrent carcinoma was the cause of obstruction in 9.3% of patients, and external hernia occurred in only 5.6%. Regional enteritis produced obstruction in six patients. Of the 152 operative procedures, 79% were lysis of adhesions only; 13.3% were by-pass procedures; and 16.1% were intestinal resections. In 20 cases the bowel was decompressed at the time of operation, using the intestinal suction tip, with care being taken to maintain asepsis. Return of intestinal function as manifested by ability to tolerate oral intake was noted in 5.2 days in the operatively decomposed cases, and in 5.1 days in all others.

Silver and Intestinal Flora

D. L. Gravens et al (4960 Audubon Ave, St Louis)
Arch Surg 99:454-459 (Oct) 1969

The authors investigated the role of the intestinal flora on the colonization of burn wounds treated with 0.5% silver nitrate and the effect of silver in the gastrointestinal tract upon gram-negative rods. Intestinal flora can act as a reservoir of bacteria to be disseminated upon the lower parts of the body. Organisms such as *Streptococcus pyogenes* and *Staphylococcus aureus* which did not occur in the stool of patients were not found on the burn wounds. *Pseudomonas aeruginosa* originated from the gastrointestinal tract in one patient and colonized area below the waist, causing clinical infection. The separation of bacterial sensitivity to silver into two ranges of concentration indicates the presence of bacterial strains with different tolerances to silver.

TUBERCULOSIS  ABSTRACTS

Sponsored by Arkansas Tuberculosis and Respiratory Disease Association

THE FIRST BREATH

Life hangs on the infant's first breath, yet all factors that operate to bring off the event safely are not clearly understood. One essential is that lung surfactant be present and at birth form a surface film in the alveoli to stabilize the peripheral air spaces.

One of the marvels of the birth of a child is the remarkable adaptation from intrauterine to extrauterine life. That the infant, when delivered, will give a lusty cry has come to be taken for granted. Failure of the event, or its delay, is tragic. Undoubtedly, adverse events at the time of delivery are the cause of a significant portion of neuromuscular and cerebral deficit in later life.

Thus, one approaches the problem of the initiation of breathing not only with the curiosity of the scientist and the attitude of pursuit of understanding for its own sake, but also with the realization that, with further understanding, morbidity and mortality associated with birth may be reduced.

Since the fundamental physiologic mechanisms of the initiation of breathing are essentially the same for all animals, there is abundant opportunity to study this phenomenon and to apply to humans knowledge gained from animal studies.

In a study of goats it was found that the fetal lung weighed nearly twice as much as the postnatal aerated lung. The difference was due to the presence of liquid. Histologic examination showed that the liquid was mostly in the airways. This means that the fetal lung near term is distended with a volume of liquid about equal to that of the functional residual capacity after replacement of the liquid by air.

Air-Liquid Interface

With the introduction of air into the lung, there is an associated increase in pulmonary blood flow. Because the osmotic pressure of the blood exceeds that of the lung liquid, the osmotic forces favor the movement of liquid into the blood. The creation of an air-liquid interface produces local pressure differences within the lung that allow for drainage of the liquid from the terminal air spaces.

Delay in the process of clearing the lung of liquid sometimes leads to a clinical syndrome which may be called transient tachypnea of the newborn. The outstanding feature is a significantly elevated respiratory rate; rales are usually absent, which is consistent with liquid in the interstitial spaces. Heart sounds are normal, as are blood gases. The tachypnea may last for 24 to 72 hours.

As for the stimuli that must be operative in the initiation of breathing, various studies have shown that tactile, thermal, and sensory stimuli can increase the output of the respiratory neurons. Chemical stimuli, which are always in the direction of decreasing P_{O_2} and pH and increasing P_{CO_2} during the birth process, are able to stimulate the first breath and doubtless are critical to the maintenance of respiration. However, with a prolonged second stage of labor, the blood gases can quickly reach necrotizing levels. Thus, use of CO_2 is a respiratory stimulent or allowing for further hypoxia is not going to be constructive in assisting the first breath, and could be lethal.

Change In Temperature

In recent years there has been a great deal of interest in whether change in temperature is important in initiating breathing. In most parts of the world the infant is exposed to a sudden change in temperature from 90° F of intrauterine life to about 70° F room temperature. Whether this is important or is only an associated event is not clear. Other possible influences on initiating the first breath have also been studied, but at present priority cannot be assigned to any one.

Mary Ellen Avery, M.D. The Amberson Lecture. *American Review of Respiratory Disease.* September, 1969, Vol. 100, No. 3.

The first breath naturally raises the question also of the first expiration. Obviously, if all the air that entered the lung were to leave it in expiration, every breath would resemble the first breath. It is necessary for the normal pulmonary adaptation at birth to create a functional residual capacity. This can be achieved only if the pulmonary surfactant is present and a surface film is formed at the moment of birth, allowing for the stabilization of the peripheral air spaces.

Studies at the time of appearance of the surfactant in fetal animals show that toward the end of gestation surfactant is always present, although at different times in different animals.

Chemical analyses of lipids have shown that the concentration of surfactant is higher in the newborn than in the adult. Since surfactant is so critically important to the retention of air in the lung at end expiration, perhaps there is an adundant supply available in the newborn to permit air retention in association with the first breath. Or, it could be that the mechanisms for the removal of surfactant are not operative in the fluid-filled lung and an accumulation occurs. In any event, it seems to be that the newborn is particularly blessed with an abundance of this essential surface tension-lowering substance.

When surfactant is deficient or further synthesis is impaired, the consequences are a tendency to airlessness with each expiration and, of necessity, the application of high applied pressures to maintain respiration. This leads to marked retractions commonly associated with atelectasis and hyaline membranes, a disorder characterized at death by a deficiency of the pulmonary surfactant. The half life of lipid components of surfactant have been estimated at approximately 14 hours. This raises the question of whether some infants who have minimal respiratory difficulty in the first hours of life may suffer from an impairment of further synthesis of this essential compound. Their worsening pulmonary status during the second and third day of life may then represent its utilization and failure of formation.

Learning From The Infant

Many of the details of how the infant can be assisted in taking his first breath are lacking, but it must be remembered that each breath after birth differs in some respects from the one before. As the lung liquid clears, the mechanical properties of the lungs change, blood gas tensions change and, therefore, any respirator must adapt to the events taking place in the infant or be operated by someone skilled in artificial respiration who can assist the infant.

Advances in physiology with respect to understanding respiratory control mechanisms and other events associated with respiration at all ages will, it is hoped, enlarge our understanding of the first breath. Possibly, too, further attention to this most significant event would throw light on respiratory problems at all ages.

Metabolism of Methyl Mercury (^{203}Hg) Compounds in Man

B. Aberg et al (Royal Veterinary College, Stockholm)

Arch Environ Health 19:478-484 (Oct) 1969

After oral administration of monomethylmercury-203 in aqueous solution to three healthy, white male volunteers, 40 years of age, the biological half-life of the ^{203}Hg was 70 to 74 days. A rapid erythrocyte uptake took place but the main activity was localized in the liver (50% of the body content) whereas the head contained about 10% of the total body content. The main excretory route was the gastrointestinal tract. The retention of the head of ^{203}Hg after continuous weekly administration of a unit dose of methyl-^{203}Hg-nitrate was calculated to be 14.5 to 15.2 units of mercury at infinity. No radioactivity was found in the sperm within 70 days after the administration. In the hair up to 0.12% of the dose per gram of hair was found as a maximum value after 40 to 50 days.

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January, 1970

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The Management of Hyperthyroidism

Bruce Webster, M.D.*

Thirty years ago the management of hyperthyroidism was simple. After suitable iodine preparation, the vast majority of cases were subjected to thyroidectomy. Today the matter is a much more complicated one. One's decision is slanted as to whether or not one reads the surgical, pharmacological, or radiological journals.

During this discussion we shall consider hyperthyroidism to consist of diffuse toxic goiter [Graves' Disease] and toxic modular goiter. Before deciding on a course of treatment many factors must be considered. Included among these are the age of the patient, the duration and severity of the disease, whether or not exophthalmos exists, and its degree of severity. The presence of cardiac complications warrants special consideration. The disease occurring during pregnancy or menopause may place it in a separate category. Finally the socioeconomic condition of the patient must be taken into consideration.

Before discussing the specific therapy, one must consider the general management of the patient. There seems little doubt that hyperthyroidism is, in the majority of the cases, induced by stresses and strains of living. Removal of these, if only temporarily, assists in recovery. The generous use of barbiturates or tranquilizing drugs is important. Similarly, the undernutrition should be handled by suitable high caloric diets. The presence of cardiac complications warrants special management. Here, it is important to remember that lowering the metabolism reduces the cardiac load. Therefore, the time element plays a role in the decision as to the type of treatment.

In considering the three available methods of management, either alone or combined, it might be wise to discuss first drug therapy alone.

* Clinical Professor of Medicine, Cornell University Medical College, New York, New York.

Drug Therapy Alone

I. Methimazole [Tapazole] 10mg orally every 6 hours: [Propylthiouracil 100mg may be substituted for Tapazole].

It is important to remember that allergic reactions may occur and that any rash, joint pains, fever, or other unusual occurrence should be reported immediately. Leukopenia occurs frequently. Therefore the blood count should be watched carefully, especially during the early days of treatment. As the patient becomes euthyroid, which usually occurs in four to eight weeks, the dose of antithyroid drugs is gradually reduced to 30mg per day. Sometimes it can be reduced even lower. If the thyroid gland enlarges during treatment, the dose of the antithyroid drug is probably too large and reduction should be tried. If the gland shrinks during the administration of the antithyroid drug alone, this is usually an indication of a reduction of metabolism.

II. Iodine Therapy. It is important to remember that iodine therapy alone has stood a test for many years in the preparation of hyperthyroid patients for operation and in some instances as a sole method of treatment. That it rapidly reduces metabolism is unquestionable. Further, it is without serious complications as far as drug reactions are concerned.

III. The combination of Tapazole or Propylthiouracil and Iodine as a preparation for surgery would seem to be generally accepted. Under such a regime, the specific drug is given until the patient is relatively euthyroid. At this time, iodine in one form or another is administered for 10 to 14 days to reduce the vascularity of the gland and to make surgery easier.

Surgical Treatment of Hyperthyroidism

Why subtotal thyroidectomy is as effective as it is in the reduction of hyperthyroidism has always been a mystery to me. Nonetheless, it is

a highly successful form of treatment of this disease. If Graves' disease is caused by an antibody directed against thyroid microsomes, it is difficult to understand why regeneration of this gland does not occur universally after a partial removal. However, such regeneration is rare.

When is thyroidectomy indicated in the treatment of hyperthyroidism? The answer to this is largely a question of individual acumen and is obviously influenced by many circumstances. First and foremost of these would seem to be the availability of a first class surgeon. Many years ago Dr. David Marine pointed out that the great thyroid treatment centers in this country largely depended on and were centered around the presence of capable surgeons who were interested in thyroid disease. I personally feel that it is the treatment of choice in well-established hyperthyroidism, in an adult individual, where no complications such as cardiac disease, pregnancy, or menopause exist. Further, I believe that it is the most desirable method of treatment if severe exophthalmos is present.

Radioactice Iodine

Prior to the development of the technique of thyroidectomy, European surgeons removed portions of the gland by injecting irritating chemical substances or infected solutions into the gland and allowing a portion of it to slough away. With the advent of the technique of thyroidectomy, such methods were abandoned. There are those who try to convince us today that surgical thyroidectomy is in the same category as these solutions. Prior to the use of radioiodine, attempts were made to destroy portions of the gland by x-ray therapy. The problem was controlling the degree of destruction. To some extent this has been overcome in the use of radioiodine. There are those who advocate this as the sole method of treatment of hyperthyroidism. I still have my reservations. I feel that is useful in the older age group or the group with severe cardiac complications. It is certainly contraindicated in young individuals and people of child bearing age. The problem of the complication of permanent hypoparathyroidism is still an open one. Further, the development of late hypothyroidism is still a major factor. There is an estimation that this reaches as high as 50% of all patients in ten years.

SPECIAL CATEGORIES

The Adolescent

Usually hyperthyroidism developing in an adolescent is moderately severe. The course here lies between prolonged administration of antithyroid drug and surgical intervention. Considering the dangers of prolonged invalidism during adolescence, it would appear that the most rapid recovery is accomplished by thyroidectomy in these cases. In a series which we studied many years ago at Cornell the incidence of recurrence has been low.

Pregnant Patients With Hyperthyroidism

The majority of these patients would appear to be best handled with antithyroid drugs or with a combination of antithyroid drugs and iodine. Care should be taken not to allow the patients to become hypothyroid. The addition of iodine or thyroid substances to the regime may prevent the development of a goiter in the fetus. Antithyroid drugs are secreted through the placenta, so mothers taking these substances should not nurse their infants. It is important to remember that a flareup of hyperthyroidism may occur after delivery. Pregnancy is, of course, an absolute contraindication in the use of radioiodine.

Hyperthyroidism in the Menopause

The period of the menopause is a common one for the appearance of hyperthyroidism in individuals who have been free of it throughout their lives. Usually such cases are not severe. The straight menopausal symptoms should be handled by suitable substitution therapy. In general, this type of hyperthyroidism can be controlled by antithyroid drugs and iodine.

Exophthalmos

Although the incidence of severe exophthalmos is rapidly decreasing, it is a serious complication of hyperthyroidism. Its appearance is an indication for the immediate beginning of some form of treatment. It is important to remember that one must not allow such a patient to become hypothyroid. If the metabolism is rapidly controlled and maintained at a normal level, the severe aspects of this complication can usually be avoided.

Summary

In selecting the methods of treatment of hyperthyroidism, it is important to remember that the patient is a person. Due consideration

should be given to the emotional factors which may have induced the disease. Further, the socioeconomic status of the patient is equally important. It is disastrous for an adolescent to spend a year as a semi-invalid. It is equally disastrous for a wage earner to be incapacitated for long time periods while we are waiting for the drug to take effect. Similarly, the frequent recurrence of symptoms which occur when antithyroid therapy alone is used, have a bad effect on the morale of the patient. Perhaps in few diseases is the sound clinical judgment of the physician as important as this. The method which will return the patient to his normal status, at the earliest possible time, and keep him there, is the one of choice.



Irradiation as an Immunosuppressive Agent in Organ Transplantation

E. R. King et al (Medical College of Virginia, Richmond)

Radiology 93:297-306 (Aug) 1969

Because of high mortality in total-body irradiation, it has been abandoned in clinical practice. Local graft irradiation has been used clinically in transplantation of the kidney, liver, and heart. It is used sequentially in the early transplant period and also during periods of accelerated rejection. Experimental data support its effectiveness as an immunosuppressive agent. Extracorporeal irradiation to the circulating blood also has been demonstrated experimentally to be an effective immunosuppressant. Its limited use in man has shown that it is effective in reversing some episodes of accelerated rejection but ineffective in chronic rejection. At the Medical College of Virginia, patients receiving kidney transplants routinely receive 600 rads to the kidney during the first posttransplant week. Additional external beam irradiation is delivered if evidence of rejection occurs.

Through on error in 1969-70 Directory of Licentiotes, we listed Dr. Preston L. Hothcock, 240 North Block Street, Foyetteville, Arkonsos, in the deceosed list of physicions. Dr. Preston L. Hothcock should be listed os procticing in Foyetteville, Arkonsos, ot 240 North Block.

Dr. Preston L. Hothcock's fother, Dr. P. Leo Hothcock, o retired physicion, died on August 27, 1969, ond his nome should be listed in the Directory under deceosed physicions.

We ore sorry for this error ond suggest you moke oppropriote chonge in your copy of the Directory.

JOE VERSER, M.D.
Secretory, Arkonsos Stote Medicol Boord
Horrisburg, Arkonsos

Plans for Family Practice Program at the University of Arkansas Medical Center

John M. Tudor, Jr., M.D.*

I. Definition of Family Practice—Family Medicine

What is family medicine? Dr. James L. Denny, the Dean at the University of Oklahoma, has said, "Family medicine is logical, it is necessary, the public wants it, legislators want it, many students want it, and the future freedom of the health care system depends on it," but he doesn't say what it is. Many people have defined it in terms of what it does, in terms of what it ought to do, in terms of how you train someone to do it, even in terms of what nobody else does. I think the understanding of what it is, is greatly simplified by the division into family medicine as a discipline, family practice as a specialty, and the family physician as the practitioner. Dr. Lynn Carmichael, my professor at the University of Miami, and one of the national leaders in the AAGP's program to promote specialization, has proposed that family medicine be the title for the discipline, the department, and the body of knowledge which comprises what can be taught about family practice. Core Content has listed a lot of these categories. Family practice in itself is the specialty which involves putting these skills and this knowledge into a functioning doctor-patient relationship. At this level it is a skill which can probably be evaluated and certified. This is the premise of the specialty boards. The family physician is the title given to the doctor who takes this knowledge and this level of skill and uses it day to day.

Well, what is different about the body of knowledge for a family physician than that of an internist or pediatrician or a surgeon?

The World Health Organization has proposed a concept of health as complete well-being in a mental, physical, and social sense.

Dr. Carmichael has developed a box graph which points out some of the differences and the needs in health care.

Some part of each life is more well, and some more ill.

The good part is health, or relatively so.

The patient is usually not so aware of his health as of his disease.

He demands (seeks) more care in the illness phase.

The cost is greater in the treatment phase than in the preventive.

The types of medical skills are different; probably different people choose their fields this way. Some physicians are better able to motivate disease prevention.

This is the art and the science of medicine.

We believe the art can be taught.

II. History of Development

The American Academy of General Practice, since it was established in 1947, has been the primary acting agency in promoting specialty training and educational programs in the field of general practice. With the publication of the Core Content of family medicine in August of 1966, the sometimes subtle word games began with changing the name from general practice to family medicine and dividing it into several lists of clinical and sociological and ethical and administrative information. Many words have been published about the goals and objectives of training programs. The AAGP nationally has published some outstanding pamphlets giving suggestions and outlines for developing training programs. Included among these are, *The Family Practice Department in the Medical School, Graduate Training for Family Practice,* and *Essentials for a Preceptorship. OTMFP (The Organization and Management of Family Practice)* aids the application of family medicine skills. (The Ohio Academy of General Practice held a seminar in April of 1968 gathering many of the outstanding people in the field of family medicine to discuss education for family practice. Reprints of that seminar are available from the Ohio Academy of General Practice.) In September of 1968 the AAGP National Convention, and in December of 1968 the AMA House of Delegates, both approved the criteria for residency training programs in family medicine which had been drawn up and submitted to the AMA Council on Medical Education. Following

* Assistant Professor, Division of Family and Community Medicine, U.A.M.C., Little Rock.

this agreement, the approval of certification as a medical specialty was obtained in February of 1969. It is expected that testing and certification of qualified persons will be started within six to twelve months of the present time.

Looking back on the struggles leading to the certification, I am reminded of the comment of Dr. John H. Knowles in a recent *Life* magazine article where he said that, "In the political arena it is the perception of a man or an issue which frequently carries the day." Again and again in recent years the interpretation of an issue as a threat has led to complications in reaching a satisfactory agreement.

I fully expect we shall have similar misunderstandings between the various "power structures" as we develop Family Practice in Arkansas.

But Family Practice is growing. There now exist 21 functioning programs which will be listed as family practice training programs in the current internship and residency listing.** An organization has been formed called the "Society for Teachers of Family Medicine" which is open to persons operating within or working toward departments of family medicine in medical schools or postgraduate training programs in community hospitals. The AMA remains the approval body for any residency programs which desire to be listed nationally.

We had 19 interested students in voluntary preceptorships this summer.

There are 8-10 interns (UAMS grads) desiring Family Practice residency next summer.

Even second and third year students are excited by comprehensive care in voluntary student clinics, as students used to go to E.R.'s to do stitching.

My optimism may be premature. During my orientation at UAMC, I have written a corollary to the Peter Principle. The Peter Principle you know, was described by a business economist at the University of Texas this year—it says, "A man is promoted to his level of incompetence."

My corollary says, "A person only understands things to the level of his competence." It is kind of like that sign seen in busy shops, "If you think you know what's happening here, it's because you don't understand the SITUATION."

**Thirty programs are approved as of Dec. 15, 1969, including the affiliated Family Practice Residency in Little Rock.

III. Special System

There are a number of ideas at the University of Arkansas Medical Center which I think are unique in giving us a good opportunity. First, I think there is a great unutilized resource in the private sector of Arkansas medicine. Physicians and their patients, who have many significant problems, each of which is unique or interesting in its special environment, should be available to be studied.

We hope to have a department that is broad enough in its specialization to have qualified people helping in many levels of health care delivery. We want to help the first year and second year medical student understand the doctor-patient relationship better by having contact with patients as they obtain medical care from existing systems. We want him also to evaluate the types of medical care he receives when he, as a student patient, obtains services from doctors that he knows and respects.

We think a department which includes specialists in the other clinical specialties can outline for the trainee a level of confidence in every field which he can be expected to attain within the period of his training. To do this may be more taxing upon the categorical specialist than giving the standard lecture of medicine as they learned it. We will need new outlines and new techniques. For example, there are subtle skills in psychiatric management of the normal or non-psychotic patient which are probably less easily discussed than the diagnosis and referral patterns of the acutely psychotic.

A system of differential diagnosis, even though used well by Sir William Osler, probably doesn't serve the clinician who sees patients rapidly and briefly for episodic illnesses. Because it is so time consuming to go through a logical system of disproving every possibility, we have to develop a system of inductive reasoning which puts the clinician on the right track and yet prevents him from making an error. Some specialists will say that this kind of short-cut is not scientific, yet the first step of the scientific method is to formulate from observation (using inductive reasoning) a theoretical explanation which can then be tested. This is what we do day after day in the practice of medicine.

Richard Scott at the Edinburgh GP Teaching Unit in Scotland says this has been a basic con-

flict in the teaching of clinical medicine—"Analysis is the essence of science and of specialization, but the practice of medicine is synthesis."

The best academic description I have seen of these special techniques and abilities of the family physician is given by Ian McWhinney, Professor of Family Medicine at the University of Western Ontario in *Canadian Family Physician:*

1. He says the family physician uses probability diagnosis based on his knowledge of incidence and symptom frequency. He recognizes how diseases present in early stages; and he knows what it is that's going around. He is aware of special patient factors of personal nature which affect the incidence of illness. He has learned the importance of early, adequate treatment.

2. His clinical methodology is based on a three-stage diagnosis—not just the illness, but also the patient's concept and expectation, the time and situation, i.e., staging.

For example, he knows that the back pain is not the same and cannot be managed the same way when it is due to strain in a young individual who expects to return to work tomorrow as when it is due to osteoarthritis in an elderly person who is barely able to care for his personal needs.

3. He uses preventive techniques. He is especially adept in the tactical applications, but he understands the need for strategic control. This terminology is clarified by a comparison to the USAF structure—TAC is composed of fighter bomber units trained for brush-fire wars, SAC has the responsibility for maintaining a defense posture to prevent large wars. The physician's preventive armamentarium may be divided in a similar way:

Tactical	*Strategic*
Periodic Health Exam.	High Risk Registers
Therapy and management of acute illness	Measles and Rubella eradication via herd immunity
Using imagination to see an underlying problem of hygiene or epidemic disease	Anti smoking programs
Personal family planning	Family planning programs

IV. Model Clinic

For a physician in training to understand the body of knowledge in family medicine one must see more of the patient than is present within the hospital. This has always been a hurdle which house staff entering practice had to overcome in developing their own way of relating to and handling patient population within their practice. Unlike the hospital environment where the emphasis and a great deal of attention is shown to the disease which brings the patient to his hospital bed; the physician in practice, whether he be a general practitioner or an internist, develops a further interest in other factors. Four steps in this development have been identified and are the following:

1. The development of a continuing relationship with an individual and with his family. He begins to see the same patient for different problems.

2. A growing awareness that the family is the fundamental unit of health care. Just as in the hospital ward we see the individual patient as the unit of illness and a disease as the presenting problem, in the practice situation we realize that the health of the individual is dependent upon tthe function of the whole family unit; the diet, the economy, the spread of infection, the state of mental health.

3. There then develops between the physician and the family a relationship that goes beyond the episodic care of illness (to what has been described as a trusteeship). The establishment of a more "tenured" relationship. In this relationship the physician is more concerned about a problem within the family because they are his patients than because it is a critical or life threatening situation. He may choose to give this family, or patient, services and personal contact that he would not extend to the casual patient that he saw in the emergency room. As this relationship with his patients develops there is a gradual, growing desire to keep the patient well and to avoid further illness.

4. This is the fourth step where the physician has a shift in his interest from diagnosis and treatment of illness to the prevention of disease and the maintenance of health.

Where can the student observe this process in action? A growing number of educators have answered, "In the model clinic." Now just what is a model clinic? I think we will have to develop for discussion purposes a model of a model clinic.

The concept of a model is one that is frequently used in educational circles to demon-

strate a possible explanation for the way something operates. So medical educators have proposed that we build a model clinic where we can look at and evaluate and study just what does go on in a family practice of medicine. I think it is pertinent to discuss the concept of a model clinic by going into some of the definitions of the word "model."

First is the model which we see as an ideal. This model is perfect. This model is so good that we would recommend that everyone else be modeled after it. Sometimes this definition gets abused.

A second meaning of the word "model" is to adjust, or test, or change—in one sense of the word, to mold. A prominent piece of federal legislation has recently become known as the "model cities plan" because its concept was to create within urban environments experimental programs which could be adjusted and tested and observed in a way that they could reach maximum benefit, and that they could then be used as laboratory for other cities with similar problems to find answers. The first and the second definition are not necessarily mutually compatible. One exasperated social worker who didn't quite understand the legislative background on the matter recently asked in Miami, "Why do they call it a model city, there is nothing good about it, it's a terrible place."

I have already spoken of the third concept of a model in the educational sense—the pathophysiological model. The pathophysiological model of a given disease doesn't really exist, but it is a concept which works as well as if it did exist. There is a little bit of scientific humility in the recognition of an explanation or theory as being a model. The physicist no longer has to say, "I understand how the atom works"; he just says, "I propose the following system as one explanation for how the atom is structured internally." The endocrine physician doesn't have to say, "I understand how diabetes occurs"; he only has to say, "I propose that the following system is the simplest way to understand what might be the cause and effect of a lack of insulin in the human body.

Similarly, the functioning model of family practice doesn't really exist. The model practice, or the practice we would like to model after cannot be isolated like a bacteria. One reason I say this is that practically no two general practice clinics are doing the same thing. I recently visited five different clinics in a period of two days and no two of them were doing things in the same way. Nor is the practitioner model someone that we can walk into the field and observe. The model that we propose sometimes has to remain theoretical because our attempts to perfect the problems will almost invariably produce new problems for which we must seek further answers.

Our model family practice clinic should be the core of the educational program in an educational department of family practice. The model clinic should be model in all of these ways that we can make it. It should have the best possible kinds of medicine. It should be ideal. It should be a place where we have enough flexibility to make adjustments, to mold it, to try new things, to set up a pattern that other people can follow. It should also be a model that is as near as we can create to the way doctors in practice relate to their patients and handle the problems that come up from day to day.

The usual way in which this is accomplished is that a panel of patients, patients almost being synonymous with family groups, are enrolled and listed as patients of the model clinic. The enrollment can be either voluntary or automatic (such as if they belong to certain geographic and financial eligibility criteria). The doctors participating in the training program either as faculty or as house staff or as students, are assigned patients from this panel who become their patients. They then enter into a continuing relationship with this family that continues as long as it can within the structure of the training program, preferably as long as they are in the training program. Their assignments are made horizontal rather than by block, so they may continue with their families.

They are then encouraged to proceed through the stages of development—the stages of continuing relationship, of awareness of the family as a unit of health care, of tenured relationship and of interest in health maintenance. It is hoped that by helping them through these stages and observing their progress through them that they can be taught the skills and managerial techniques that other physicians have developed

piecemeal and by accident. More experienced physicians attached to the program can help them by bringing up their past experiences. Specially trained people from the social sciences can help to emphasize skills in behavioral relationships just as the medical school faculty has emphasized clinical skills during the third and fourth year of the student's training. For the student, who is enrolled in the program, an earlier start can be had, emphasizing the behavioral sciences in his approach to the doctor, the patient, and the illness.

The specific ways that I hope this clinic will fit into the University of Arkansas training program is that the clinic should be adjacent to the area of availability of medical care. We have space—earmarked. The physicians should be readily available and assigned to the clinic on regular basis so that they can see their patients often enough and early enough to get to know them faster and more completely. The in-patient facility for these patients should be open to the trainees so that they can observe the influence of the hospitalization of a patient on his way of life and of his way of life on the illness itself.

I would hope that all the disciplines that are involved in health care can relate to this clinic. We should have nurses and social workers (and health engineers) and practical nurses and aides being trained and working and studying in the same unit so they can relate their skills to our skills. Ultimately, I hope that we can give the best possible kind of medical care, a continuing comprehensive personal medical care, to all the families that are related to our program.

Now it becomes obvious that I, as a result of my university training and university position, do not and probably cannot fully know the needs, exactly or precisely, of the physician in practice. This is a fact that I have criticized in my teachers at several universities during the past eight years. I think we in the discipline of family medicine recognize this fact and we depend a great deal on the practitioners of the art to demonstrate their skills and to show their needs in a way that we can analyze them and try to fill them. I think we also believe that there are objective ways in which to improve the delivery of health care—through providing more practicing doctors, through better geographic and economic availability of health care, through better utilization of physician time by getting more helpers into the picture, and through teaching skills in relating oneself to the patient.

V. Goals of Division of Family and Community Medicine

To be more specific, let me list some of the plans and needs that we will have at the University of Arkansas School of Medicine in a Division of Family and Community Medicine.

We will very shortly take over the supervision of the emergency room. Provision has been made to have interns on duty at all hours and the house staff coverage should be increased progressively as the emergency room continues to grow. The last ten years the daily census has more than quadrupled and we are only now beginning to change plans to correct the overload and to advance beyond it to the stages of more complete availability. We will want attending physicians to teach and answer questions.

I will be working this year with the Student Health Service. Utilizing residents to extend our manpower, we will try to offer a more comprehensive and personally oriented kind of care for the students and their families.

The preceptorship program has already been mentioned and we will continue to use this as an available teaching resource that represents something entirely different than what we have at the University Medical Center. Our efforts will be to emphasize the patient's response to his environment, both the disease causing and health producing aspects of that environment.

At a minimum we expect each student to understand the community in which he works and the office to which he is assigned. We expect him to find specific examples of certain kinds of illness and understand the ways in which the illness and the family and the community are tied together. We will hope that each student will design a small project within the categories of family and community medicine on which he can report after his return from his preceptorship.

Our contact with students should be multidisciplinary and at many levels. The new curriculum structure specifies that students be introduced to patient care in the first year, and it is hoped that physicians from the Division of Family and Community Medicine can play an

important role in this introduction. The third year clerkships will primarily be on existing services, however we feel that either horizontal assignments or joint rounds emphasizing the behavioral and emotional aspects of illness would be important at this stage. We need medical anthropologists and understanding psychiatrists to do this well.

In the fourth year elective programs we will hope to have students in continuing relationship with patients, either through preceptorships or preferably in a year long exposure to families at the family medicine clinic (once or twice a week).

The student AMA group at the University has initiated community clinics which I think are a good learning experience as well as an indication to the underprivileged community that the health care industry is interested in their welfare. I plan to support these clinics both officially and unofficially. I don't think anyone should either try to underestimate what the students hope to accomplish here nor try to take it over from them, however, I think larger scale efforts will be needed in the future, and I think these could very well be tied in with our family clinic.

I mentioned a multidiscipline department in family and community medicine. Let me explain that. I think that there are so many aspects of the new parts of medicine that it is difficult for a general practitioner or family physician to master all of them, and in the teaching role I think we need sophisticated knowledge of many fields and can best get this from professionals in the various fields. We will need experienced family physicians. I would hope to have statisticians and epidemiologists, social workers, anthropologists (who would help us describe population and cultural problems). We will need an adequate number of specialists from the existing medical specialties. Their emphasis will be to instruct and prepare family physicians to an adequate level of competence within their specific field.

Within the community aspect of the problem we will need close liaison with all the existing health care organizations in Arkansas, and especially Pulaski County. We will need persons trained in preventive medicine and public health who can work closely with the health departments. We should have specialists in health education to work on the problems of the school situation. I hope that we will even be able to utilize specialty knowledge in business administration and political science to introduce our trainees to the health care problems within these fields.

A lot of study has gone into broadening the health care professions by creating new jobs. The physician assistant made famous at Duke University and the independent duty nurse which has been tested in southeastern Colorado and health care clinics within Denver by Dr. Silver are examples. Many of you physicians in your offices make much better use of your nurses and aides than we have been able to do within the organized institutions of medicine. I think the University in its role as a critic and evaluator must look into these problems and I would hope that we will have joint efforts with the Schools of Nursing and of the technical skills to evaluate the use and to improve the services that can be made by these persons to the physician in his everyday practice. For this reason, I will hope to approach the various departments and schools to invite them to participate in this family medicine clinic on a long term training and evaluation basis.

VI. Steps Toward Family Practice Residency

Finally, the residency program will require a tremendous amount of our effort. I would visualize that we could support at least a three year, continuous, eight person vertically-constructed system—training twenty-four residents over each three year period. This includes the internship as the first year. The central unit of this training program would be the out-patient family medical clinic, probably located in a satellite building at St. Vincent Hospital. Each resident would spend thirty to fifty per cent of his time attached to this unit over the entire three year period, caring for families which he would keep on his roster for the entire training program and following these same patients into the hospital when admitted. Another thirty per cent or so would be attached to the in-patient services and would overlap in time with the clinic experience. This can be accomplished by assigning two persons to cover the same service in the sort of arrangement frequently used in partnerships. During both of these phases the

resident will be encouraged to seek consultation and specialty knowledge from the faculty members and specialty residents available to the department through the University affiliation. A third portion of the training will constitute elective time, probably amounting to approximately 20 per cent of the total schedule which might be either sub-specialty medical rotation, special preceptorship assignments in the communities of the state, or basic courses in allied fields such as sociology, business administration, epidemiology, or public health. A close tie-in is expected to the new Continuing Medical Education project and more details will be available on that at a later time.

This is a good time for family practice. The students want it, the people want it, the legislators want it, it has been needed for years, the techniques are becoming available, the body of medical knowledge known as "family medicine" is growing, and I think it is one answer to the health care problems of the future.



Surgical Research in the Communication Zone

T. Matsumoto, S. R. Wyte, and G. M. Nemhauser (Div of Surgery, Walter Reed Army Institute, Washington, DC)

Arch Surg 99:537-541 (Oct) 1969

Creatinine phosphokinase (CPK), LDH, and SGOT enzyme changes were evaluated during the convalescence period of men injured in battle. CPK elevation was more specific than that of LDH or SGOT in tissue injury of the extremity (95%) and highly specific for infection (92.9%). Of the patients who had infected soft tissue wounds of the extremity with a CPK elevation, 94.1% had *Pseudomonas aeruginosa* cultured from the wound surface. CPK elevation due to muscle damage in extremities without infection was less than 60 units/ml after four days post-injury. The CPK value returned to normal faster than LDH or SGOT values in patients with soft tissue injury. Re-elevation of CPK after initial injury indicated the development of wound infection.

Characteristics of Iron Dextran Utilization in Man

P. A. Henderson and R. S. Hillman (Univ of Washington Medical School, Seattle)

Blood 34:357-375 (Sept) 1969

The major portion of iron dextran iron becomes available to the erythroid marrow only after uptake and release of ionic iron by the reticuloendothelial system. With large intravenous infusions, 1,000 to 2,000 mg, the rate of removal of the iron dextran complex from plasma is enough to supply the marrow with more than 200 mg of iron/day. However, in the present studies, the observed rate of iron delivery to the erythroid marrow was far below this level. With time, reticuloendothelial iron dextran stores became less available, the serum iron level fell, and marrow production was restricted to levels below twice normal. Thus, an iron-deficient type of erythropoiesis appeared in some patients, while iron dextran stores were still readily visible on examination of marrow stroma.

A Prospectus for Arkansas SAMA

Donald C. Thompson*

Medical students the country over are becoming more concerned about all aspects of their lives as well as their most important function of being a student and undergoing the training requisite to their futures as practitioners of the art and science of medicine.

It is to be hoped that the medical student, especially at Arkansas, fulfills his much talked about role as a graduate student by exhibiting the maturity and composure which would allow his becoming more involved in a responsible way with many of the facets of the medical establishment not automatically open, in fact traditionally closed, to the student. The emphasis, it should be noted is on *responsible* involvement *after* a demonstration of maturity.

This prospectus is an outline for planned activity at the UAMC School of Medicine and is intended to set goals for which students can reach and to make the faculty and the practicing physicians aware of just how the students would like to become involved in their own afairs as well as in the affairs of the school. This is a plan of responsible action, presented to express a desire to view the intimate workings of a great institution so that the student may better understand, even as he is a student, the whys and wherefores of that institution.

The Arkansas Chapter of the SAMA has become involved in various projects over the years, but this has been given new life most recently, primarily by the actions of a few students. These students envisioned a plan whereby SAMA could become an active participant in community affairs and lead the medical center in this direction. The SAMA Community Health Project initiated by these students is an outreach by the university in a cooperative effort with private physicians, pharmaceutical companies, paramedical students, and other interested groups, with the leadership and impetus being furnished by SAMA students. The "project" has furnished minimal health care and screening services to people otherwise, for whatever reason, not receiving any health care through other avenues. Further, it has offered advice on nutrition, family planning, and basic sex education to aid in dispelling ignorance and to hopefully make life easier for some and to give others a chance to gain control of their environment rather than being controlled by it.

The SAMA Community Health Project, at the present time, represents the backbone of Arkansas SAMA and practically all that SAMA can offer students in the way of services at the local level.

However, realizing that not everyone's interest lies in the area of community health, Arkansas SAMA should strive (and is striving) to improve the minor projects of the past and seek new areas that will bring greater student involvement in what represents the only real organization in any way dedicated to furtherance of a student's goals and the betterment of student life at the UAMC.

Some of the old projects to be improved are:

Used Booksale: This project is now under the direction of a very dynamic junior and, with student participation, can furnish an ongoing, and, hopefully at least part-time, service to students. It would be very nice to work with the women's auxiliary, the University Shop, or TM&S Texts so that full-time shelf space would be available for display and more ready access by students to used books on campus.

SAMA News: This feature in the Medico which has begun during the 1968-69 school year and for which SAMA pays $50 per issue per page will be continued during the coming year. Since its inception it has been a focal point of discussion and, at times, even rabid criticism. It is to be hoped that the verbal discussion carried on by some students would find its way to the paper in type written fashion so that the SAMA News and the Medico both would be fulfilling their role as an open forum for debate. Also, it is to be hoped that that same open forum would lead more students to become active members of SAMA and that SAMA would thus become truly representative of the students. This is not to be construed as a move by SAMA

* President, 1969-70.

to replace the duly elected Student Council of the School of Medicine, for it is firmly believed that this latter institution is a necessary and vital part of the student life and maintains the balance such that a student is always free to remain unattached of the SAMA.

Beginning School Party: Each year in the past SAMA has had a "beer bust" following the afternoon of freshman registration. This should be improved upon so that the many students who do not indulge will have no qualms about attending. Further, there should be a coffee hour or other type of "get-together" early in the first semester of school so that the students might relax a little then.

These are a few of the areas in which SAMA has worked in the past. But, for Arkansas SAMA to become truly worthwhile for the students, many more areas of benefit directly to the student must be developed; i.e., SAMA must become more active in membership services. Some of the areas of future involvement are outlined below:

Speakers: In an effort to bring many of the particularly germane and controversial topics of the day to our campus, SAMA has contacted several men of national recognition and invited them to speak to the student body of the college of medicine. Hopefully, the faculty committee regulating the "Dean's hour" (4 o'clock on Thursday afternoons) will see fit to allow all other functions, such as classes, to be dismissed so that all might be able to attend these lectures. Speakers thus far contacted are:

Dr. John H. Knowles, Directors, Massachusetts General Hospital, Boston.

Dr. John S. L. Holloman, Past President, National Medical Association.

Dr. Maynard Shapiro, Immediate Past President, American Academy of General Practice.

Dr. Victor W. Sidel, Chief, Community Medicine Unit, Massachusetts General Hospital, Boston.

Dr. Robert S. England, President, Association of American Physicians and Surgeons.

Dr. Edward J. Kowalewski, President, Academy of General Practice.

Others to keep in mind are:

Dr. Roger O. Egeberg, Assistant Secretary for Health and Scientific Affairs of the Department of Health, Education and Welfare.

Mr. C. Joseph Steller, President, Pharmaceutical Manufacturers Association.

Mr. E. Claiborne Robbins, Chairman of the Board, A. H. Robbins Company, Inc., and Immediate Past Chairman of the Board for the Pharmaceutical Manufacturers Association.

Dr. Quentin D. Young, Past National Chairman, Medical Committee for Human Rights.

Dr. Mal Rump, Past President, Association of American Physicians and Surgeons.

And, of course, one should always consider the national officers of the SAMA as possible speakers.

Special Lectures: One special lecture, which has been held for several years in the past and should be continued, is the Annual Hal Black Lecture delivered by Dr. Hal R. Black, Jr., a Little Rock Urologist, who discusses the economics of private practice and explains where it's all going.

Also, Dr. Marcus Jordon, Professor of Pharmacology in the School of Pharmacy will deliver a talk on "Drug Interactions" at some point during the year, probably during January or February.

Investments Seminar: The firm of Dabbs Sullivan-Trulock and Co., Inc., has agreed to give a short series on stocks and bonds for the students of the college of medicine. We shall have to wait until the response of the students to this is evinced before future plans are made.

Wine Tasting Party: The Wiederkehr Winery has offered to give a wine tasting of their best wines and to enlighten the students of the school of medicine on the history and possible medical uses of wine.

Arkansas Medical Society: To involve the students more into the ways and means of private medical practice, it is hoped that an official membership can be arranged for those students desiring same. It would be most beneficial if students could receive the Journal of the Arkansas Medical Society as well as become involved in various committees of the AMS, at least as ex-officio members.

Preceptorships: The preceptor program was designed to give students a first-hand knowledge of private, particularly general practice, in rural Arkansas. In the past, in fact until the class of 1969, the Preceptor Program of the School of Medicine was compulsory. Since the program

has been made non-compulsory few students have chosen to spend time during their summer working with a private practitioner out in the state, away from the capital city. One of the major reasons voiced to explain non-participation is the fact that many students must work during the summer to "make ends meet" and "stay even," i.e., get by, and hopefully save some money for tuition the coming fall.

Since many state societies have already adopted a stipend/loan program to allow students to receive about the same as if they worked ($250-300/month), it is to be hoped that a program could be worked out such that students at the UAMC School of Medicine could at least borrow additional funds to finance this time spent in preceptorship. However, it should be stressed that this is not payment for services; for indeed, a student whose primary aim is his own edification could not expect payment. And, a student contributing to the income of a private practitioner's office would, more than likely, be paid accordingly anyway. Further, it has been stated that such time as is spent during a bona fide preceptorship (one for which the student is not paid for services) may be counted toward the total of 36 weeks spent during the senior year.

Student Loans: Since all contributions to AMA/ERF not earmarked for student loans at UAMC are either put in the general student loan budget and distributed to all schools equally or they are put into the research budget, it is hoped that the private physicians can be prevailed upon to contribute specifically to the UAMC student loan funds directly or earmark their AMA/ERF donations for that purpose.

Pulaski County Medical Society: The same considerations for AMS apply to PCMS.

Arkansas Academy of General Practice: The officers of the Arkansas AGP have already suggested student affiliation including subscription to either GP magazine or Family Practice magazine.

Medical Societies in General: Much of the financial backing of Arkansas SAMA presently comes from the above medical societies. Also, there has been quite good private physician participation in the SAMA Community Health Project. It is hoped that the societies will see fit to back Arkansas SAMA in the future and that the students, through their participation in the societies' committee activities, can show more appreciation than has generally been shown in the past.

Medical School Involvement: The Curriculum Committee in the 1968-69 school year included representatives of both SAMA and the Student Council. Since the new curriculum has been initiated, the Curriculum Committee will be running at a snail's pace. However, involvement in the curriculum can continue through course evaluations on an ongoing nature; and, these should include individual professor evaluation.

Further, student involvement in all phases of the school committee activities should be effected, at least as ex-officio members. This is particularly important in the areas of admissions and the loans and scholarship committees.

Many students, if not most students, at one time or another raise questions about the areas of admissions and loans. A student sitting on each of these committees would do more than anything else to assure students that their best interests are truly uppermost in the committee members' minds.

Naturally, this idea is repulsive to many faculty members both in and out of the administration. However, many of these same people give very vociferous lip-service to the idea of the medical student as a mature graduate student. Maybe these people will soon begin to practice as they preach and allow these sound and mature students the opportunity to view the workings of the administration first-hand.

Committee Activities: At present Arkansas SAMA has active committees in the areas of community health, book sales, medical education, and minority admissions. Naturally, these areas should be expanded to include other areas of student interest which can thus involve more students. Some areas which should be considered are: Abortion, National Priorities, Smoking and Health, Physician's Responsibility to Society, Health Care Delivery Systems, Generics vs. Trade Names of Drugs, and guest speakers. Many others are possible.

Of course, all of this activity will require members who are interested in giving selflessly of their time so that others of the student body, the city, state, and nation might, along with themselves, find a better world in which to live;

and, so that each individual might become master of his (or her) destiny rather than vice versa.

At the present SAMA membership is only about 75% of the student body. This low figure is primarily the result of students not seeing that this organization is doing anything for them and is interested only in perpetuating its own ineffectual executive councils.

However, even though the Executive Council transacts the business, any student may speak at any meeting. If a matter is of great importance, it is brought before a full meeting of the chapter and discussed at length.

It is strongly felt that as the presently active students of Arkansas SAMA demonstrate their willingness to work and serve, that others will join them. And, as students demonstrate their maturity and willingness to cooperate, then better relations shall be fostered between the private physicians and the administration of the School of Medicine.

Virilizing Tumors of Adrenal Gland in Childhood

J. D. Burrington and C. A. Stephens (Hosp for Sick Children, Toronto)

J Pediat Surg 4:291-302 (June) 1969

Eight previously unreported cases of virilizing tumors of the adrenal cortex in children are discussed. One of the five children with carcinoma still survives at 18 years of age, and two of the three with adenomas are alive after 3½ and 2 years, respectively. One infant was virilized at birth and had evidence of excess androgen in utero, presumably from the tumor. Three had virilization before one year of age and two of these are dead from metastases. All children with virilism regardless of age should have a complete assessment of endocrine function as soon as possible.

Selective Vagotomy Without Drainage

H. Burge et al (West London Hosp, London)

Brit Med J 3:690-692 (Sept 20) 1969

It is generally agreed that when total abdominal (truncal) vagotomy is performed, a drainage operation — pyloroplasty or gastrojejunostomy — must be added to prevent gastric retention. Presumably this is because truncal vagotomy denervates the pylorus. In selective vagotomy the vagal supply of the pylorus and the prepyloric stomach is retained and it would seem, therefore, that no drainage operation is needed. This paper deals with the results of bilateral selective vagotomy without any drainage operation. Neither pyloroplasty nor gastrojejunostomy is needed in the absence of organic narrowing at the pylorus or in the duodenum.

Summary of Remarks

Euthanasia: "The Care of the Dying"*

R. B. Robins, M.D., F.A.C.S.**

The word "euthanasia" is made of eu, meaning easy, happy, pleasant, painless, and thanatos, meaning death. Every physician recognizes it is his duty to relieve the pains that precede death and this is considered one of the outstanding missions of the medical profession. This particular form of euthanasia is universally recognized and accepted.

The legal concept of euthanasia as mercy killing is in conflict with social standards today in all civilized countries and there are no laws that permit it. It is called suicide if performed by the patient himself or murder if performed by another.

It is the doctor's business to prolong life, but not necessarily to prolong the act of dying. The author has found after practicing medicine for forty years that there is no aspect of medicine where more humanity is called for than in caring for the dying. The dying should be permitted to die in peace. The good doctor is able to recognize the distinction between prolonging life and prolonging the act of dying.

Most patients don't want death to be a long-drawn-out, messy and painful matter. All of us are victims of emotion, but from a realistic and merciful standpoint I have seen occasions in the life of patients dying from incurable cancer when perhaps the patient should be permitted to die with as little prolongation of life and suffering as possible.

With advances in modern medicine we now have means to keep people living artificially by the use of tubes in their stomachs or in their veins plus oxygen, respirators, artificial lungs and other machines. We have fluids, vitamins, electrolytes, protein supplements, blood transfusions, antibiotic agents, hormones and various other preparations available so that we can keep people suffering for an indeterminate length of time. I know cases where people have been kept alive in a decerebrate condition living like vegetables. Is this prolongation of life or prolongation of death? To me this is prolongation of suffering, pain and death. One of the essential duties of the physician is to relieve suffering and pain. There are instances where this can only be done by permitting a merciful death to occur.

So far as I know, no religious groups (Roman Catholic, Jewish or Protestant faiths) say to the physician that he should use extremely extraordinary means to keep life going when death is obviously approaching. A helpful rule for the doctor to follow is THE GOLDEN RULE. What would the doctor himself want if he were in the patient's condition?

* Panel Discussion: The Chicago Temple, Chicago, Illinois, Sunday night, September 25, 1966. Panelists: Rev. Herman W. Seinworth, Methodist Minister; Andy Johnston, Psychiatric Social Worker; R. B. Robins, M.D., F.A.C.S.

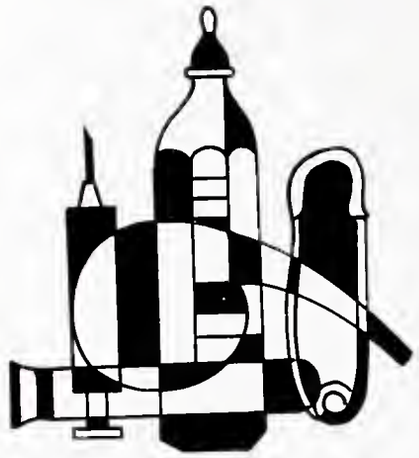
** Assistant Administrator, Professional Activities, Norwegian-American Hospital, Inc., Chicago, Ill.

Specificity of Iodine-Azide Test for Carbon Disulfide Exposure

L. Novak, D. Djuric and V. Fridman (Institute of Occupational and Radiological Health, Belgrade, Yugoslavia)

Arch Environ Health 19:473-477 (Oct) 1969

The specificity of the iodine-azide test (IAT) was studied. In alcoholics treated with tetraethylthiuram-disulfide (TETD), IAT and diethyldithiocarbamic acid (DDC) were determined in the urine. IAT was not positive in all cases but DDC was always positive. If meprobamate is applied together with TETD, the percentage of positive IAT increases. Therefore, in workers exposed to carbon disulfide, the disulfiram therapy must be taken into consideration.



DEPARTMENT OF

PEDIATRICS

UNIVERSITY OF ARKANSAS
SCHOOL OF MEDICINE

Grand Rounds

Ulcerative Colitis

Discussors — Roger B. Bost, M.D.*, Rosalind S. Abernathy, M.D.** and Kerrison Juniper, M.D.***
Participant — Jon K. Newsum****
Editorial Director — Jerry G. Jones, M.D.*****

Case Presentation

MR. NEWSUM: This 12-year-old white male was well until the summer of 1965 when he had a two-day episode of abdominal pain, nausea, vomiting, and bloody diarrhea. He was then well until November 1965 when diarrhea recurred with 12 to 14 watery stools per day, cramping abdominal pain, and occasional vomiting. Stools were sometimes black or blood streaked. Diarrhea seemed worse when he was anxious. He was hospitalized two weeks in Colorado at the onset of his illness but no diagnosis was made. No foods seem to cause the diarrhea, but he had stopped drinking milk. No medication prescribed had helped. During the initial five month period of illness, he lost 30 pounds and his weight decreased from the 75th to the 3rd percentile. In Colorado, at the time of onset, he was drinking city water. In Arkansas the family used well water.

He was hospitalized at the University of Arkansas Medical Center in April of 1966. At the time of hospitalization, he was very thin and pale but in no distress. Height was 142 cm. and weight was 29.2 kg. Mucous membranes were somewhat pale. The remainder of the examination was within normal limits.

Hemoglobin was 10.8 gm%, hematocrit 35.5%, and WBC 14,800. Serum iron was 15 ugm% and IBC 229. Milk precipitins, stool cultures and stools for ova and parasite examinations were negative. Smears from a stool specimen in PVA and from sigmoidoscopy showed many leukocytes and epithelial cells. PPD intermediate and histoplasmin skin tests were negative. An upper GI series was normal. Barium enema will be shown. Sigmoidoscopy revealed liquid, bloody stool in the rectum. The bowel wall was slightly edematous and hyperemic. Only a mild degree of spasm was noted, bleeding was minimal, and only one small ulcer was seen.

Psychiatric evaluation was made, and the examiner felt the patient was a well-adjusted boy. He seemed to be somewhat compulsive about his school work and had always made better grades than his older siblings. Symptoms had begun while he was living in Colorado with his father, but did not change with the move to Arkansas. A brother was sent to Vietnam one month before his chronic diarrhea began.

A diagnosis of ulcerative colitis was made, and

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he was started on Lomotil 2.5 mgm. and Azulfidine 750 mgm. both four times daily. Azulfidine was decreased in 2 days to 500 mgm. four times daily. His diarrhea gradually subsided, and he was discharged on Azulfidine. His weight was the same as on admission.

Azulfidine was discontinued several weeks after discharge. In June 1966 he had recurrence of a brisk diarrhea without blood, occasional vomiting, and the loss of 5 pounds in weight. He was started back on the medication by his private physician, and by August 1966 he had regained to 30 kg. and was having only two to three loose stools a day. Lomotil was added at that time.

Over the next three years, he was seen every six months in our clinic, and usually he reported having two to three loose stools a day, sometimes containing blood and with occasional abdominal pain. Azulfidine was given 500 mgm. three times daily on two weeks and off one week, except between June and October 1969 when it was taken daily. Lomotil was not found to be helpful. His height gradually increased to 149 cm. and weight reached 34.5 kg. by February 1967, and has remained close to that since. His bone age was normal in April 1969. Winstrol 2 mgm. was given from August to October 1969 with a weight gain of 1 kg. In October 1969, at nearly 16 years of age, he showed no signs of puberty.

In October 1969 he was proctoscoped again. The mucosa was red, friable, granular, and scarred with some ulcerations. The rectal vault appeared contracted. At that time Cortisone 100 mgm. nightly by rectal infusion was started. Subsequent proctoscopy showed decreased friability and bleeding.

Discussion

DR. BOST: Over the past few weeks, we have had a number of children in our Out-patient Clinic with ulcerative colitis. Thus, it appears appropriate to discuss this disease this morning. First, Dr. Abernathy will present a *summary of cases* we have seen.

DR. ABERNATHY: I reviewed the charts of all the patients with ulcerative colitis coded out in our hospital. There were 6 boys and 1 girl, 4 Caucasian and 2 Negro children, ages 4-15 years. A series from Duke University indicated only a 12% incidence in Negro children despite the fact that 50% of their patients were Negro.[1] Most of our children were private or full-pay patients, so this may be a disease of the higher socio-economic level. All presented with bloody stools. Six had diarrhea, while one had rectal bleeding without any real diarrhea. Six had fever, six had abdominal pain, and three of the older children had marked weight loss. The entire colon was involved in six of the children, the left half only in one. One had a normal barium enema initially but it was abnormal by the time she was seen in our hospital. We had no instance of arthritis, iritis, liver disease, splenomegaly, or unusual skin manifestations. Two children had pyogenic skin problems. Two had anemia, probably due to blood loss. There was a reversal of the albumin-globulin ratio in three patients, and a 5-year-old Negro boy presented with gross edema. He had a total protein of 4.8 and albumin of 1.2 mg%. One patient failed to respond to high doses of steroids and an ileostomy. She did not gain any weight in almost two years' time and continued to have rectal bleeding. She was re-admitted and a total colectomy was done, including removal of the rectum. We have no follow-up on her. The father of one of our patents also had ulcerative colitis. Four episodes were controlled in our patients with Azulfidine, and four required prednisone.

DR. BOST: We will not have time to cover all aspects of this very complex disease this morning. We do hope to review some of the important features of the disease, one of which is the extreme variability of symptoms and diversity of manifestations. Also we want to contrast this disease with ileitis.

Although ulcerative colitis can begin at almost any age from infancy to senility, it is primarily a disease of late alodescence and young adulthood. It is not rare in children. In a series of 871 patients reported by Jackman, Bargen and Helmholz,[2] 11% were below 16 years of age. In another series of 2000 cases reported by the same group, 5% had onset before 10 years of age. Five cases reported by Enzer and Hijmans[3] began in infancy. The principal differences noted in the cases were increased severity and poorer prognosis. Thus, early vigorous treatment is recommended when the disease begins early in life. The disease seems to occur predominantly

in males (ratio of 3:2). It affects Caucasians more than Negroes and seems especially prevalent in Jews.

Though there have been a number of theories as to the etiology, the cause of ulcerative colitis is still unknown. The disease *pathology* typically involves the colon, where it begins with pinpoint hemorrhages followed by small mucosal and submucosal abscesses that undermine the mucosa, producing ulcerations.[4] As the disease progresses the ulcerations become more extensive, and the remaining islands of mucosa resemble polyps and are called pseudopolyps. Histologically, the initial lesion is mucosal and submucosal inflammation. Microscopic abscesses form in the crypts of the mucous glands, followed by ulcerations. Some fibrosis and inflammatory scarring of the bowel wall develops as the disease advances. In 65 to 75% of the cases, the disease is confined to the colon. It usually starts in the rectosigmoid and extends proximally. It may involve the terminal ileum. In a report by Michener, et al.[5] barium enema examination of 74 children with ulcerative colitis revealed the entire colon involved in 66, the left half in 8, the right colon in 4, and segmental involvement in 2. In three of the children, plain X-ray film of the abdomen revealed "toxic dilatation" and barium enema was not done.

In contrast, regional ileitis (enteritis), Crohn's disease, or granulomatous colitis may involve any part of the gastrointestinal tract. Regional ileitis typically involves only the terminal ileum; however, it can also involve other areas. In 61 children from age 10 to 18 with this disease reported by Winkleman,[6] the involvement in 29 was limited to the terminal ileum, in 20 it included the jejunum and ileum, 20 involved the ileum and colon, and 8 children had colon involvement only. Regional ileitis begins as an edematous process, followed by inflammation and fibrous thickening of the bowel wall with narrowing of the luman. Ulceration is not as prominent and bleeding from the bowel is less common. This disease rarely occurs in children under age 10 or 12 years. Another characteristic of regional ileitis is that the process in the gut begins and ends abrupted. This is not true of ulcerative colitis.

The first slide (Fig. 1) shows a section of colon removed from a patient with fairly advanced



Figure 1
Section of intestine with marked changes of ulcerative colitis.

ulcerative colitis. Note the extensive mucosal ulceration and pseudopolyp formation. In contrast, the next slide (Fig. 2) shows a segment of bowel from a patient with regional ileitis. Note the marked thickening, fibrosis, and rigidity of the bowel wall with the "rubber hose" effect, producing the so-called "string sign" on barium examination.

The classical *clinical manifestation* is frequent watery stools, containing small amounts of feces with variable amounts of pus, mucous, and blood. It is typical for the child to be awakened ot have numerous stools during the early morning hours. As the disease becomes worse, his sleep is interrupted more and more by nocturnal bowel movements.

Diarrhea is not always present in ulcerative colitis. Particularly during the early stages of the disease, the manifestations may be entirely

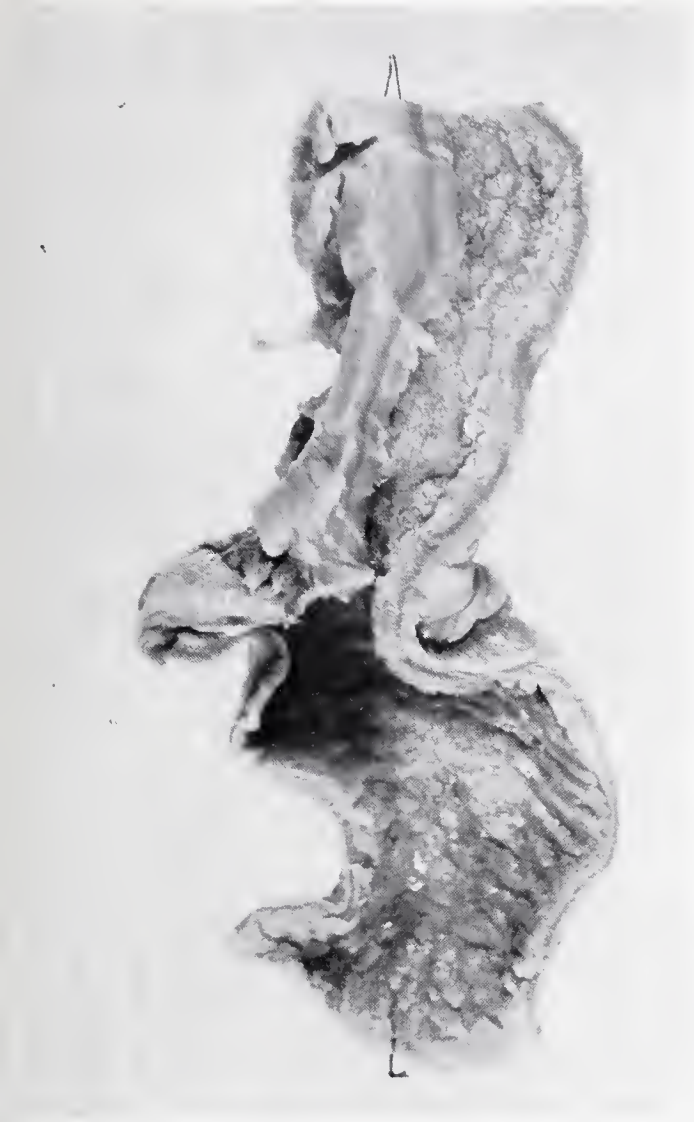


Figure 2
Section of intestine with upper portion involved by severe regional enteritis.

extra colonic. This fact is often not appreciated by physicians. The presenting complaint of ulcerative colitis in 125 children reported by Michener[7] included diarrhea in 67, rectal bleeding in 26, weight loss in 12, arthritis in 5, growth failure in 3, erythema nodosum in 2, anemia in 3, pyoderma in 1, and abdominal pain in 6. It was emphasized that only 67 of the 125 children had diarrhea at the onset. One should be aware that ulcerative colitis can present a picture initially that can be suggestive of rheumatic fever and other so-called collagen diseases. In some instances, it may be many months before colonic symptoms appear.

Abdominal pain, particularly cramping and tenesmus, are common. In some patients mucosal swelling and spasm may lead to rectal narrowing with distention of the colon above leading to "toxic megacolon." This condition should be suspected if there is any significant distention of the abdomen on examination and can be confirmed by a plain X-ray of the abdomen. In the presence of "toxic megacolon," barium enema is probably contraindicated because of the danger of large bowel perforation.

Rectal bleeding occurs in nearly all patients with ulcerative colitis at some time. Often these patients pass gross blood and most develop anemia, due to blood loss or other factors. Vitamin deficiencies, hypocalcemia, and bone demineralization may develop. Young children are prone to have nausea and vomiting. Almost all develop anorexia and weight loss leading to malnutrition. Marked growth retardation and delayed sexual development are common. About one-third of children with long-standing ulcerative colitis have abnormal liver function tests. Fatty degeneration of the liver is common, as well as a chronic form of hepatitis. Systemic manifestations include fever, chills, prostration, and leukocytosis. Arthritis and arthralgia occurred in 31 children among 121 with ulcerative



Figure 3
Roentgenogram of barium enema examination of patient.

colitis reported by Korelitz, et al.[8]

Diagnostic procedures include:

Sigmoidoscopy—This is a crucial diagnostic procedure in ulcerative colitis. Severe changes include ulcerations, bleeding, exudation, mucosal granularity, scarring, and pseudopolyp formation. The earliest changes may be only friability of the rectal or sigmoid mucosa, with the appearance of petechiae and bleeding following gentle swabbing with a cotton pledget. In suspected cases, it is helpful to remove some of the accumulated secretions in the rectal ampulla and perform smear and stain for pus cells. A purulent exudate is considered the hallmark of the disease in the early phase. Because enemas may wash away the mucosal exudate, no specific preparation is recommended before sigmoidoscopy. It is also important to do stool examinations for amoeba.

Barium enema—Though X-rays may be normal for the first year or so, the classical findings include shortening and narrowing of the colon, with loss of haustral markings, mucosal ulcerations, and perhaps pseudopolyps.

Mucosal biopsy—The findings are often conclusive even when changes on X-ray and sigmoidoscopy examination are minimal.

The extremely variable *clinical course* and pattern of this disease is characteristic. In general, most cases are either acute fulminating, remitting, or chronic continuous. Though the remitting type is the most common, the chronic continuous form has the worst prognosis.

Complications of ulcerative colitis are common and include bowel fistulae, fissures, toxic megacolon, and carcinoma of the colon. Though carcinoma is more common among older patients, it may occur in as many as 10% of adolescent children who have had the disease five years or longer.

The *prognosis* is variable. Approximately 60 to 70% of children with ulcerative colitis do relatively well with good management. Patients with the remitting type of disease always do better than those with the chronic continuous form.

The *management* of this very complex disease is difficult and, for reasonable success, requires continuous close follow-up by a dedicated concerned physician. Continuity of care is the hallmark of successful treatment. Conservative therapy includes diet, adequate rest, psychotherapy in selected cases, antidiarrheal drugs (opiates, Lomotil), anticholinergics, treatment of the anemia, and sulfonamides (nonabsorbed Azulfidine-salicylazo-sulfapyridine). In selected cases, adrenal steroids given either orally or by enema are indicated. Total colectomy may be necessary in the presence of perforation or impending perforation, presence or suspicion of cancer, or in the presence of fulmonating, life-threatening disease.

Dr. Juniper: The *X-rays* taken at the time of barium enema examination of this patient show narrowing of the colon, with a lack of naustral markings. The normal mucosal pattern is absent. Multiple small serrations along the entire colon are present, suggestive of small ulcerations. These films are fairly typical of ulcerative colitis.

Let me mention one article. Several years ago Warren and Sommers[9] studied very carefully the *pathologic changes* in ulcerative colitis and regional enteritis. They defined the basic nature of the disease in the following manner, comparing the pathologic changes of ulcerative colitis and regional enteritis. The initial process in granulomatous disease is a sclerosing lymphangitis. There is enlargement of the regional mesenteric lymph nodes draining the segment of involved bowel. Apparently, lymphatic obstruction occurs and the entire wall of the gut is involved. Edema of all layers of the bowel develops, followed by a granulomatous change not unlike tuberculosis, except that it is non-caseating. The process basically is not an ulcerative one. In contrast, idiopathic ulcerative colitis begins as a crypt abscess. As the abscess extends, the overlying mucosa becomes deprived of its blood supply, the mucosa sluffs and ulceration results. This process is limited to the mucosa and does not involve the entire wall.

As Dr. Bost mentioned, ulcerative colitis commonly begins in the rectum and extends upward, whereas granulomatous changes generally begin in the terminal ileum and extend down into the colon. However, exceptions occur and regional enteritis may begin in the colon, and even the rectum.

Initially the stool of the patient with ulcerative colitis contains pus with large numbers of polys because of the inflammatory nature of the process. In granulomatous colitis ulceration is a later phenomenon, so the stools are less

likely to contain large numbers of polys, and bleeding tends to be a later phenomenon than in ulcerative colitis.

It is important in patients such as this to exclude amebiasis, which is a common disease in this area. We have accumulated about 150 invasive cases of amebiasis in the past 13 years, with about 20 deaths due to the disease, so it is potentially a serious disorder. Thus, a *stool parasite examination* should be obtained on all patients with chronic or recurrent diarrhea. Remember that there are interferring procedures and substances which must be avoided. If the patient has had barium, kaopectate, bismuth-containing material, or antibiotics, particularly broad-spectrum antibiotics, an adequate stool examination cannot be obtained for 10 to 14 days after the last dose. It is important to know that the patient has not had these materials when you are collecting the stool. If they have, a negative examination has very little weight from the standpoint of excluding parasitic disease. We also have an amebic serologic test which has been extremely useful in detecting the disease. The indirect hemagglutination test for amebiasis so far has been positive in about 92% of our invasive cases. Consequently, it is extremely useful as a screening technique, particularly when the patient has had interferring substances and one cannot exclude amebiasis on the basis of the stool examination.

Questions and Comments

QUESTION: Would you comment on the long-term outlook for these patients?

ANSWER (DR. JUNIPER): Individuals with ulcerative colitis tend to have a stormy course and many of them eventually get into difficulty from complications. Generally, removal of the colon solves their problem, although it leads to new problems from the ileostomy with nutritional and emotional disorders. In contrast, regional enteritis often tends to burn itself out. Resecting the lesion to get rid of it never seems to work too well with regional enteritis, and most people limit surgical therapy to handling complications such as an abscess formation and obstruction.

QUESTION: Is infection associated with granulomatous enteritis?

ANSWER (DR. JUNIPER): No one has been able to come up with any really convincing evidence incriminating any particular organism. Probably tuberculosis was the disease most difficult to exclude because pathologically the process is almost identical to tuberculosis involvement of the gut. But this is felt now to have been adequately excluded as the cause of idiopathic granulomatous disease.

QUESTION: Is toxic megacolon associated only with ulcerative colitis?

ANSWER (DR. JUNIPER): Toxic megacolon is probably a reaction to fairly extensive involvement of the colon, in the form of a localized paralytic ileus. Ulcerative colitis happens to be one of the more common diseases that involve the colon extensively, but toxic megacolon has been reported in amebiasis, and I suspect it can occur in any of the acute bacterial dysenteries.

COMMENT (from audience): Physicians, both pediatricians and psychiatrists, tend to be somewhat afraid of patients with ulcerative colitis. Frequently these patients are rejected. A comprehensive approach to their care is needed, but in addition the patient needs to be able to identify with one physician.

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SURGERY at the UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE*

*Under the direction of Gilbert Campbell, M.D., Professor of Surgery.

Anterior Sub-Capsular Cataract Resulting From a Blow to the Eye*

Calvin Hanna and Jerry L. Potts**

An opacity of the anterior sub-capsular surface of the lens may be known by several titles including: Anterior Capsular Cataract, Anterior Sub-capsular Cataract, Anterior Surface Lens Cataract, and Anterior Polar Cataract. These cataracts apparently are due to a proliferation of the epithelial cells over the anterior surface of the lens.[1] There are three types of anterior sub-capsular cataracts described in the literature: (1) congenital, (2) traumatic, and (3) "planar opacity" in complicated and hypermature cataracts.[1] In the case of contusion induced cataracts in the absence of perforation, the lens capsule remains intact and unaffected. Due to the contusion induced stimuli the resting cells over the central area of the anterior surface of the lens undergo cell division. With the increased number of cells a plaque forms that may protrude into the pupillary space. Following the contusion an opacity develops rapidly and over a period of several years the opacity covers the axial anterior surface of the lens.

The histologic changes in the lens induced by contusion to the eye have been reported in part by Parsons[1] and Lamb.[2] In the much cited case of Lamb a sub-capsular opacity followed an episode of severe coughing with a dislocated lens and retinal detachment in a 51-year-old man. Davidson reported on the slit-lamp examination of the lens of six cases of anterior sub-capsular opacities secondary to contusion in the absence of other eye pathology.[3,4] There are few other documented cases of trauma induced anterior sub-capsular cataracts in the absence of other eye pathology.[1,3,4]

Although the anterior sub-capsular cataract appears to be a rare condition this may not be true. For example, Bemporad, Sours and Spatter reported two cases of cataracts following chronic headbanging in children, the etiology of which could have been due to minor contusion to the globe.[5] In the case reported here minor contusion to the globe resulted in an anterior sub-capsular cataract in the absence of other eye pathology.

A 40-year-old male gave a history of receiving a blow to the globe 3 years and 3 months prior to cataract extraction. A small conjunctival hemorrhage on the nasal aspect of the globe resulted from this blow. Uncorrected vision at that time was normal (20/20-2). Twenty-one months later vision was reduced to 20/60 as a result of developing anterior sub-capsular lens changes. At the time of surgery the lens was opaque and vision was limited to counting fingers. The course following surgery was uneventful. One month after surgary the visual acuity was 20/40 with a plus 12.00 sphere.

The lens was normal in size with a bulge on the anterior surface. The opacity extended over the anterior surface of the lens and the capsule was clear. The lens was fixed in formalin, stained with one per cent osmium tetroxide, and

*This investigation was supported by PHS Grant NB-04024 from the National Institute of Neurological Diseases and Blindness, U.S.P.H.S.

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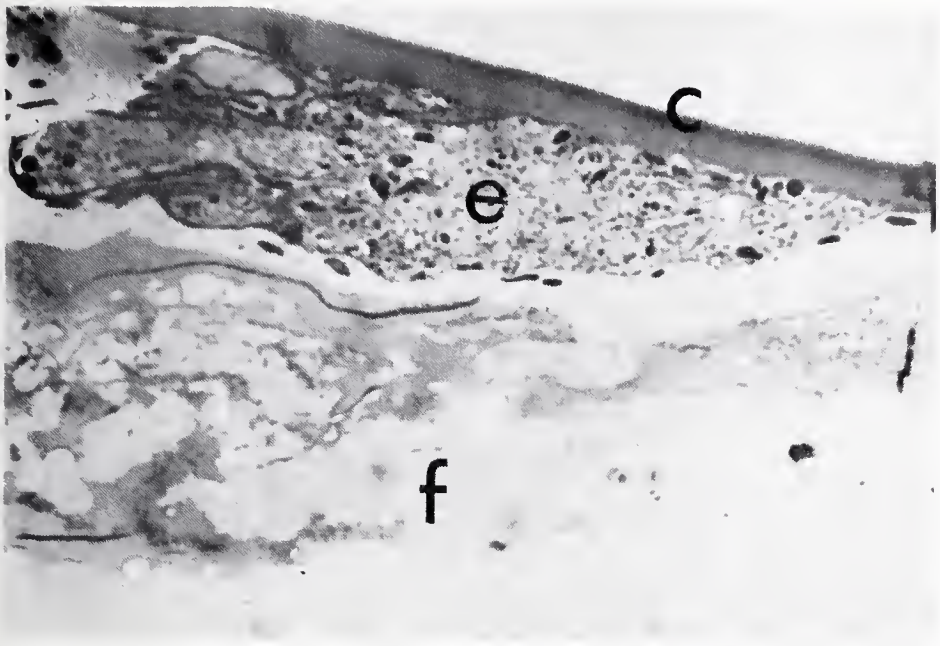


Figure 1

Photomicrograph of edge of anterior plaque of lens. From the top down is the lens capsule (c), an area of epithelial cells (e) some of which are in a state of degeneration and the area of degeneration cortex fibers (f). Magnification, 300 times.



Figure 2

Photomicrograph of anterior surface of lens just beyond the plaque showing a normal appearing lens capule (c) and underlying epithelial (e) cells. Magnification, 200 times.

dehydrated in ethanol and propylene oxide. It was then cut through the sagittal plane into four equal quadrants and embedded in Araldite (epoxy resin). The lens was cut 1 to 3 micron-thick and stained with alkaline toluidine blue.

The anterior and posterior lens capsule was of normal adult thickness. The center, posterior and equatorial regions of the lens were normal, and the lens bow of nucleated developing lens fibers was present in the equatorial region. At the anterior surface beneath the capsule was an axially placed plaque. The plaque rested on fibers of the lens cortex and the plaque consisted of a mass of epthelial cells, many of which appeared to be in a state of degeneration. Some of these cells at the edge of the plaque were elongated but they did not resemble fibroblasts. At the edge of the plaque and extending through the lens equator the epithelial cells were normal. The lens cortex fibers reaching from the anterior pole to almost the lens equator and extending to the depth of the nucleus of the lens were in a state of degeneration. This type of histological picture of the anterior sub-capsular cataract (Figs. 1 and 2) is similar to that described by Lamb.[2]

In addition, there is a recent case of a teenage child who received a blow to the eye 6 years earlier and an anterior sub-capsular cataract was present. Histological examination of this lens revealed extensive degeneration of the lens fibers and an absence of the lens capsule. There was no evidence of a sub-capsular plaque having formed. We would welcome any case material

and lenses bearing on the anterior sub-capsular cataract. We gratefully thank John W. Dodson, Jr., Hot Springs National Park, Arkansas, for supplying the lens and case history.

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Clinical Investigations in Treatment of Meningeal Leukemia: Radiation Theravy Regimens vs. Conventional Intrathecal Methotrexate

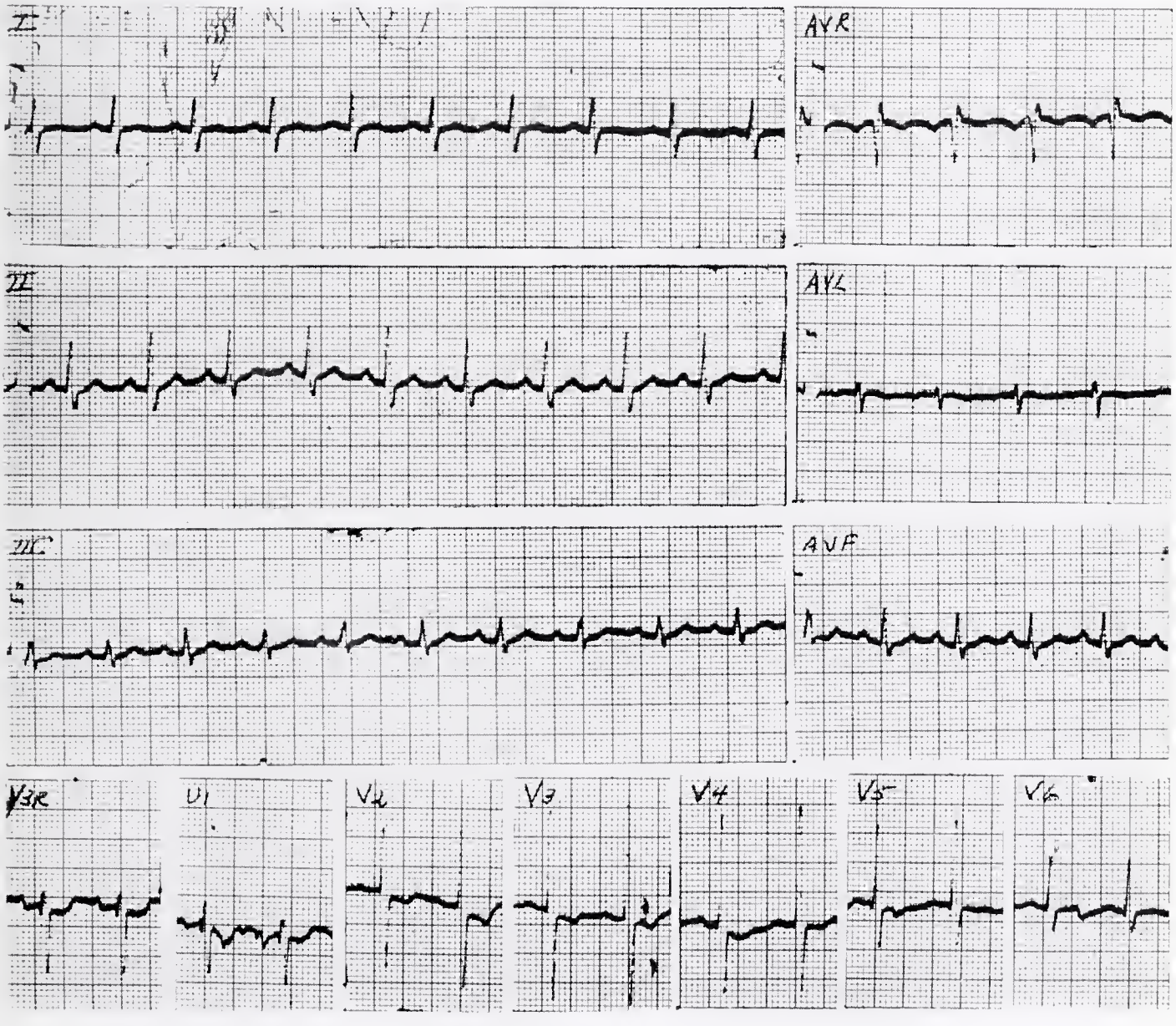
M. P. Sullivan et al (Southwest Cancer Chemotherapy Study Group, Houston)
Blood 34:301-319 (Sept) 1969

Using intrathecal methotrexate IT MTX, 0.5 mg/kg every two to three days until the spinal fluid mononuclear cell count decreased to 10 cu mm or less, produced spinal fluid remissions in 78% of 51 children experiencing their first episode of CNS leukemia. Radiation therapy to the entire cranium, using tumor doses of 500 rads and 1,000 rads, was ineffective in normalizing the CSF, although symptomatic relief was often obtained. Radiation of the entire cerebrospinal axis using a tumor dose of 1,000 rads resulted in a spinal fluid remission rate of 92%. Six of seven children in marrow remission when radiation therapy was administered showed evidence of myelosuppression. A combination therapy regimen with two injections of MTX preceding radiation of the entire cerebrospinal axis (750- to 1,000-rad tumor dose for children in marrow remission, and 250- and 500-rad tumor dose for children in marrow relapse) and one injection of MTX intrathecally following radiation resulted in spinal fluid remission in 100% of the evaluable children in the treatment group.

ELECTROCARDIOGRAM OF THE MONTH

AGE: 44 SEX: Male BUILD: Medium BLOOD PRESSURE: 108/58
CARDIAC DIAGNOSIS: Cor pulmonale?
OTHER DIAGNOSIS: None.
MEDICATION: None.
HISTORY: Long history of cough, dyspnea, asthma; symptoms worse past month.

See Answer on page 297



The Department of Medicine, University of Arkansas Medical Center
James S. Taylor, M.D., Professor of Medicine

RADIOLOGY CASE OF THE MONTH

Prepared by the
Department of Radiology, University of Arkansas
School of Medicine, Little Rock

See Answer on page 297

C. R. Cassady, M.D.





HISTORY AND PHYSICAL EXAMINATION: This eleven-month-old female fell from bed at age four months and sustained injuries to her head. A right parietal hematoma was present, but the infant was not in distress. Her neurological examination was normal on admission and on follow-up examinations. A small pulsatile area in the right posterior parietal region was palpated on 7/28/69.



PUBLIC HEALTH AT A GLANCE

Lead Poisoning in Children

Man's use of lead antedates recorded history. Numerous lead ornaments, water pipes and eating and drinking utensils have been noted during excavations of ancient civilizations. The occurrence of lead poisoning has undoubtedly paralleled man's use of element. Today, although we have learned to avoid lead for water pipes and food containers, the heavy metal and its compounds persistently appears with increasing volume close at hand in our environment. Over one million tons of lead are used by manufacturers in the United States each year, with some 70,000 tons going to make lead-based paints. It has also been estimated that two pounds of lead per person per year are emitted in automobile exhausts.

The hazard to man's health from the use of lead in industry has been recognized for several generations. Only in the last two decades have health workers begun to realize that lead poisoning of children in our cities is a problem of great magnitude. The widespread lead poisoning in children basically involves toddlers who have abnormal appetites, leading them to eat numerous nonfood items. This habit of eating dirt, plaster and paint chips is called pica, and forms an essential linkage in making lead poisoning the problem that it is. Access to crumbling lead paint is commonest in older, usually run-down housing.

Steps in Prevention

Lead poisoning in our society is an entirely preventable disease. Elimination of the problem, however, will require a joint effort among health workers, physicians, social workers, housing authorities and parents. One of the first preventive measures sought was elimination of lead-based paints in housing interiors. For example, since 1955, the American Standards Association has recommended that only paint with 1% of lead content or less be considered for safe use on children's toys, furniture and housing interiors. Builders of modern structures have generally followed this recommendation for interiors. Hence the problem is minimal in modern homes, while it remains a threat in older, dilapidated houses.

Health workers and physicians can detect and treat cases of lead poisoning. Social workers can advise on the cause and elimination of abnormal appetites such as paint. Housing authorities can enforce housing codes to spur repair or elimination of undesirable housing. The first line of defense, however, is the parent. Parents need to see that chipping and peeling paint is removed from all interior surfaces, and that they are repainted with a safe nonlead-based paint. The parent must also prevent the child from chewing or eating foreign objects. He can look for signs of chewing on woodwork, furniture and toys. Finally, providing the child with safe, interesting toys as well as the parental attention that all younger children require can do a great deal to prevent this terrible disease.



EDITORIAL

O Tempora, O Mores
Arkansas Medicine Circa 1970

Alfred Kahn, Jr., M.D.

The problems of the Arkansas Medical Society are the problems of the U.S.A. They are for the most part not medical problems but sociological phenomena peculiar to this day and time. At times the medical profession is singled out by the press and public figures for criticism, which at times is harsh—and at times valid but more often than not it is the expression of our mores, habits, and customs finding expression in the medical segment.

Taxes are a good example. The U. S. Government has instituted many paternalistic measures as Medicare, Medicard, and so on. Without arguing the merits of these programs, they do cost money. Once having been instituted taxes naturally follow; those who bear the burden of the taxes are often not the beneficiaries of the taxes and this evokes criticism. When the taxes for the domestic programs are supplemented by the need for more tax money to pay for expensive foreign programs, further protests inevitably follow. Who will pay these taxes? The answer has to be those who can pay will have to bear this burden. If taxes are too high, the answer is not to complain about the taxes but to examine the programs which your Congressional Representation and elected officials have approved. The solution is the public voting booth —and at this time, apparently a voting majority favor the current government spending program.

Individual tax relief seems worth examining in some depth. There are bound to be inequities. Professional people as physicians have not been getting the same tax formulas as business people. Businessmen are permitted to get a salary, which really consists of two parts; a current paycheck and a deferred payment which is designated retirement income. Physicians in the past have not been permitted to do this to the same extent as an equivalent earner in business. The Keogh Bill allowed a $2,500 portion of the income to be tax deferred but the inequity was that nonphysicians in industry earning the same amount as a physician could defer much more. Recently the courts have conceded that physicians can incorporate and this seems eminently fair as there are many other non-manufacturing fields where incorporation is permitted. To realize full benefit of this, single physicians should be permitted to incorporate their offices under similar regulations as other incorporators. This tax relief is possible through appropriate state legislation, although the U. S. Division of Internal Revenue is seeking a law to prevent physician incorporation. The real basis for physician incorporation is not to seek selfish unilateral tax relief, but to correct a manifest inequity in the tax system, and no one could really argue on the latter point.

Malpractice suits are very much in the newspaper and the amounts involved in individual cases often run into hundred thousand dollars and up. A member of Congress from another state was quoted as having inferred the medical ranks need to be policed. It is commonplace to have malpractice insurance premiums go up, up, up. Actually a closer examination of the situation is that as physicians become affluent they are a natural target for lawsuits which involve the recovery of money.

A century ago when physicians were less prosperous, one might win a suit against a physician but he would have no means to pay the claimant. It is undeniably true that better medicine is practiced now than it was 100 years ago, 50 years ago, or even 25 years ago. More lives are saved by better drugs, better techniques, and greater knowledge. Despite this, errors of judgment and negligence may occur, but the point is percentagewise it cannot be shown that these instances are on the upsweep. Malpractice cases are not due to more negligence; they are the result of the physician being a better financial target for recovery. They are one segment of an affluent society.

Unrest among the Youth of America has been ascribed to various causes and no one knows the antidote. Some say this is due to a permissive society while others insist it is too much money, worry about the war, poor communication with the older generations, etc. In any event, no one can argue that there is a ferment in most educational institutions. These energies intelligently expended can be useful in that they subject our thoughts and systems to scrutiny instead of taking them for granted; destructive student demonstrations lead to Nihilism and anarchy as they offer nothing of value to replace established institutions, government, mores, and so on. There is a chapter of the Student American Medical Association at the University of Arkansas School of Medicine and its leaders are trying to accomplish good in the community, and in their school. They have set up health clinics; they are sponsoring lectures. They are interested in constructive and worthwhile changes in this Medical School. They have permitted the use of the editorial pages of the Medico for dissident opinions but have pointed out that the opinions represented the writers and not the S.A.M.A. The Arkansas Chapter of S.A.M.A. is trying to be a responsible member of this community.

The cost of medical education in Arkansas is increasing but this is not surprising. The cost of all types of education is increasing. Salaries are higher. Equipment is more expensive. Medical teaching institutions face a special problem in that their usual population is being drained into other institutions because of Medicare and in the future, Medicard. Many patients who came to the University Hospital for care have diffused through many other hospitals affording the latter hospitals an opportunity for service to a larger group of needy, deserving, and now paying patients; the by-product of this is the opportunity for fine teaching programs in the private hospitals who formerly could not afford them.

Arkansas medicine is good medicine, and it is representative of medicine in similarly populous states. There are problems of physician distribution, ratio of general physicians to specialists, hospital beds, 24-hour physician coverage of institutions, etc. These problems are not new, not local, and not completely susceptible to solution, but they are recognized—and for the most part remedies are being sought.

RESOLUTIONS



BE IT RESOLVED, that the Clark County Medical Society pay special tribute to our recently departed member, Dr. Lewis B. Tilley. Dr. Tilley possessed superior knowledge and ability in his field. He exhibited a profound dedication to his work and was a respected member of the Society.

BE IT RESOLVED, that we acknowledge our debt for his contribution to the community and the medical profession.

BE IT FURTHER RESOLVED, that a copy of this Resolution be sent to his wife and family, to the State Medical Journal, to the local press, and be placed in the minutes of the Society.

Eli Gary, M.D.
Chairman of Resolutions Committee

———————————

WHEREAS, Dean Winston K. Shorey and the faculty of the University of Arkansas School of Medicine with much diligence and effort have conducted an excellent series of postgraduate lectures as part of the 1969 scientific program of the Pulaski County Medical Society with an open invitation for attendance by all Arkansas physicians; and

WHEREAS, Other Arkansas Physicians as well as members of the Pulaski County Medical Society benefited significantly from the lectures,

thereby contributing to the desire for ever-improving patient care; therefore be it

RESOLVED, That the Pulaski County Medical Society expresses its deep appreciation to Dean Shorey and the faculty of the University of Arkansas School of Medicine for their time and effort in making this significant contribution to the postgraduate education of the physicians of Arkansas.

MEDICINE IN THE NEWS

THE MONTH IN WASHINGTON

Washington—An American Medical Association spokesman outlined the AMA's voluntary national health insurance plan. "Medicredit," for consideration by the House Ways and Means Committee.

Dr. Russell B. Roth, speaker of the AMA's House of Delegates and a practicing physician in Erie, Pa., said the plan, which would be financed in part by federal income tax credits, is flexible and would assure all Americans—no matter how limited their financial resources—of adequate health care protection.

"Representing this country's physicians as we do," Dr. Roth said, "the AMA is on record in its belief that it is the basic right of every citizen to have available to him good health care.

"Today we want to put before this committee a plan which is universal in scope, voluntary in nature, and realistic in terms of total program cost."

He estimated the program would cost the federal government $8 billion to $9 billion a year, but about $3 billion a year of that would be offset by liquidation of the Medicaid program. Medicare would continue.

"For those in low-income categories, this protection is theirs without expense or contribution on their part," Dr. Roth said. "For those with moderate and higher levels of income, Medicredit provides a system of cash incentives to enable them to protect themselves against major health care costs. . . .

"Our proposal is the result of years of careful study of our existing mechanisms for delivering and financing health care, coupled with our close study of the federal government's ability to fund a universal health insurance program. . . .

"It would give to persons who have purchased comprehensive health insurance the option of receiving a tax credit on their annual federal income tax return, a credit based on their tax liability. That is, a taxpayer could take as a credit against the amount of income tax owed to the federal government, all or part of their personal cost for comprehensive health coverage. Persons or families with a lower tax liability (usually reflecting lower income or more dependents and allowable expenses) would receive a greater tax credit. And those families in the lower 30% income range, would, without cost to them, receive a certificate enabling them to purchase health coverage from qualified groups or plans."

The AMA plan calls for esttablishment of a "Health Insurance Advisory Board" to create Medicredit guidelines. It would be chaired by the Secretary of Health, Education and Welfare and include the Commissioner of Internal Revenue and public members. It would review the effectiveness of the program and file annual reports with the President and the Congress.

Basic medical benefits of Medicredit would include:

— Up to 60 days of inpatient hospital services, including maternity services;

— All emergency room and outpatient services provided in the hospital;

— All physicians' services, whether performed in the hospital, home, office or elsewhere.

Supplemental benefits to basic coverage would also be eligible for tax credits.

Dr. Roth stressed the importance of utilizing private insurance carriers, this taking maximum advantage of private sector competition to help hold costs down.

Rep. Durward G. Hall, M.D. (R., Mo.), a former member of the AMA House of Delegates submitted to the committee another national health insurance plan. The first part of his two-part plan calls for the federal government to furnish persons eligible for Medicaid with health insurance certificates covering certain specified basic health protection. The states would have the responsibility for the balance of health care for an eligible individual after his basic coverage had been exhausted. Thus, the Hall plan would replace Medicaid.

The second part of the Hall proposal calls for the federal government helping, in cases of catastrophic illness, those persons who can afford normal health care insurance only.

Other national health insurance plans are being sponsored by Walter Reuther, head of the automobile workers' union; the AFL-CIO; Sen. Jacob K. Javits (R., N. Y.), and Gov. Nelson Rockefeller of New York. Indications are that the committee will not give serious consideration to such legislation before next year at the earliest. However, it appears probable that the issue will come to a vote in Congress before the 1972 elections.

* * *

The AMA also submitted to the Ways and Means Committee a statement on the Nixon Administration's "Health Cost Effectiveness Amendments of 1969" legislation.

The AMA commended the Department of Health, Education and Welfare for its efforts to curtail the rising costs of Medicaid and Medicare, but said that the Association believes "there are better and more appropriate means of meeting this problem.

As for the provision prohibiting payment to physicians who have committed fraud, overcharged or otherwise abused the Medicare program, the AMA said:

"It should be kept in mind that there presently exist remedies to reach the cases of abuse which may exist—certainly the cases of extreme abuses which HEW has asserted these proposed penalties are intended to reach. While it is true that the law does not provide authority to disqualify physicians to prospective participation, a carrier may reject or review a physician's claims on an individual basis as each claim is presented.

"The apparent concern of the Congress regarding alleged abuses and increasing program costs may require some changes in the administration of federally financed health care programs. However, the proposed amendments appear to introduce more severe remedies than the problems require."

As for the provision that utilization review committees pass retroactively on the medical necessity of admission of Medicare patients to hospitals, the AMA said:

"At the present time a utilization review plan of an institution must provide for review, on a sample basis or other basis, of admissions, duration of stays, and services furnished but must provide for review of each case of extended stay and also determine medical necessity of further stay. The law provides for 3 additional days of benefit payments after a negative finding and notification.

"Where a finding has been made that the admission was unnecessary, no payment would be made. Thus the denial of payment would be retroactive to the date of admissions. The 3-day grace period is removed from existing law.

"The AMA previously objected to initial certification of the need for admission to a hospital, and this initial certification requirement was removed from the law. Under this bill the utilization review committee would be required to review the attending physician's judgment as to the need for hospitalization. The present requirement of the committee under Medicare is to review extended stay cases to determine need for further stay; thus it does not review a great number of cases of hospitalization where the patient is discharged earlier. Requiring committees to review all cases of hospitalization would impose a tremendous burden on the committee, and create additional heavy demands on physicians' productive man hours.

"An adverse finding by a committee would

subject the patient to individual liability for hospital charges. As a result, this provision could act as a restraint of patients receiving care, particularly in those cases where a physician recognizes the possibility of differing medical judgments concerning the admission."

Post Graduate Education Program

The proposed Post Graduate Education Program of the Arkansas Regional Medical Program has been aproved but not yet funded. The Program's Advisory Council has recommended that when the program is implemented, it be concentrated into a pilot program in one councilor district. As funds become available, the program would then be extended into other councilor districts.

Family Practice Residency Program

Plans are underway by the University of Arkansas Medical Center, St. Vincent Informary and Arkansas Baptist Medical Center, all in Little Rock, for a three-year Family Practice Residency Program. Application for residency program approval presented to American Medical Association Review Committee. It is hoped that the residency program may be started July 1, 1970.

Family Practice Refresher Course

The Committee for Continuing Education of the University of Arkansas School of Medicine is scheduling a course for two weekends prior to the first examination of the American Board of Family Practice. The scheduled dates are January 10-11, 1970, and February 7-8, 1970 at the University of Arkansas Medical Center.



Course in Pediatrics to Be Held

The annual Postgraduate Course in Pediatrics of the University of Texas Medical Branch will be held in Galveston, Texas, March 12 and 13, 1970. The course will emphasize practical pediatrics with guest lecturers Anke Eckhardt, Ph.D.; Henry G. Cramblett, M.D.; Stanley Crawford, M.D., and Ted Knicker, M.D.

Registration fee will be $50.00. No charge for interns, residents, or military physicians. Further information will be furnished by L. H. Lockhart, M.D., Chairman, Pediatric Postgraduate Committee, University of Texas Medical Branch, Galveston, Texas 77550.

Hearts and Husbands Program

The Arkansas Heart Association and Lambda Chapter, Beta Sigma Phi, will present a free one-day program titled "Hearts and Husbands" at Barton Coliseum in Little Rock on Saturday, January 31, 1970. This program will acquaint women with the "risk factors" of heart disease and tell them what they can do to help prevent heart attacks from striking the men in their families.

The program will begin at 10:30 a.m. with a display of exhibits depicting the "risk factors" and what to do about them, research programs of the Heart Association, Cardiopulmonary Resuscitation and other Heart Association activities. The lecture and question-answer portion of the program will begin at 1:00 p.m.

Dr. Alton Ochsner, Jr., of New Orleans will be the principal speaker and will present a review of progress to date in the fight against diseases of the heart and blood vessels.

Following Dr. Ochsner, a panel of six Arkansas physicians will discuss risk factors that lead to heart attack and answer questions about same. The Arkansas Medical Society is supporting and helping to sponsor this program. The Society encourages its membership and the members of the Auxiliary in particular to be present for this program.

Cancer Seminar — May 4-5, 1970

On May 4-5, 1970, The American Cancer Society will sponsor the twelfth annual Cancer Seminar in Las Vegas, Nevada, at the Frontier Hotel.

Emphasis this year will be on roundtable discussions of faculty with participants. Topics to include: Leukemias and Lymphomas; Head and Neck Chemotheraphy; Use of Chemotherapeutic Agents; Mammography and Thermography; Terminal Patient Management, etc. Includes

Nurses' Programs, AAGP (12 hours) and activities for wives.

Dr. P. L. Hathcock Honored

A memorial of honor and respect enacted by the Washington County Medical Society in recognition of the passing of one of their valued members who has crossed the silent bourne.

We realize the inevitable flight of time and circumstances and eventualities of life often bring us to occasions that embody reverence and sadness. We feel that we do not possess words worthy of the occasion, but it is, we feel, the desire of every human heart to want to be remembered, so today we are turning the rustling pages in the book of memory and indicating the name of our dear friend and colleague, Dr. P. L. Hathcock.

Dr. Hathcock was a high type, noble citizen, and he acquired and held the trust, confidence, and high esteem of his colleagues. His kind, sympathetic and understanding attitude was a great source of comfort and encouragement to his patients. He treated all alike, both the well-to-do and the poor, in the same kind, courteous and efficient manner, and all who came within the circle of his influence felt they were helped and benefited. Through his kind and understanding manner he built in the minds and hearts of his patients a monument of treasured friendship that will not be erased by the erosive influence of time.

Dr. Hathcock had faith in his Creator, himself and his fellow man which entitles him to the rewards that attend a good, useful and noble life.

Council Meeting, Sunday, November 23, 1969

The Council of the Arkansas Medical Society met at 11:00 a.m. on Sunday, November 23rd, at the Marion Hotel in Little Rock. Present were: Wood, Fowler, Kennedy, Shuffield, Saltzman, Fairley, Bell, Edwards, D. Gray, Lazenby, Irwin, Duzan, Kemp, Bethel, P. Kolb, Orr, Kirby, Long, Koenig, Thomas, Hyatt, Whittaker, Chudy, Wilkins, Kahn, John Herron, George Mitchell, Winston Shorey, Edgar Easley, Jerome Levy, Lee Parker, Kenneth Siler, Marlin Hoge, Wright Hawkins, A. C. Bradford, Frank Padberg, Joe Scruggs, Robert Burger, Fred Inman, J. Warren Murry, Morriss Henry, James Guthrie, John M. Tudor, Mr. Leon Swatzell, Mr. Eugene Warren, Mr. Paul Harris, Mr. Paul Berry, and Mr. Paul Schaefer.

The Council transacted business as follows:

I. Dr. Wood called for a moment of silence in observance of the death of Dr. James M. Kolb, Sr. Upon the motion of Shuffield and Fowler, the Council voted a resolution of regret on the death of Dr. Kolb. It was directed that a copy of the resolution be sent to Mrs. Kolb and published in the *Journal of the Arkansas Medical Society*.

II. Chairman Wood introduced Mr. Leon Swatzell, AMA Field Service representative. He then asked the physicians who were guests of the Council to introduce themselves.

III. Dr. Payton Kolb announced that Dr. James Morrison wished to resign as councilor from the eighth district. Dr. Kolb nominated Dr. William S. Orr, Jr., of Little Rock to succeed Dr. Morrison for the remainder of his unexpired term. The nomination was seconded by Dr. Shuffield. Dr. Orr was unanimously elected by the members of the Council.

IV. Upon the motion of Kemp and Kennedy, the Council voted to instruct Arkansas' delegates to the American Medical Association to oppose a limit on the length of time a delegate may hold that position.

V. Upon the motion of Shuffield and Kolb, the Council voted to approve a request from the Arkansas Pediatric Society for cooperation in promoting the dispensing by pharmacists of all medications in child-protective containers. The motion included a suggestion that proprietary drugs be included among those to be dispensed in the safety-type containers.

VI. Chairman Wood announced that he had appointed Dr. Stanley Applegate, Dr. H. W. Thomas and Dr. C. C. Long to investigate the Society's retirement plan for its employees and asked for a report from the committee. Dr. Thomas reported that the committee had studied the program carefully and recommended that the Society adopt a policy of retiring its employees at age 65 with 25 years or more of service on a retirement income of 65%

of their annual earnings—65% to include Social Security benefits. Upon the motion of Koenig and Saltzman, the committee's recommendations were approved and adopted as policy.

VII. Dr. Shuffield discussed the formation of the Health Careers Council and recommended that the Society participate. Upon the motion of Kolb and Long, the Council voted to seek to participate in the Council and request that the Executive Committee select the Society's representative.

VIII. Dr. Lee Parker, as chairman of the Medical Education Committee, reported that the Regional Medical Program had its funds cut 80%. The Arkansas Regional Medical Program wished to suggest that a project covering only a small region of Arkansas be selected so that all of the small amount of money available could be concentrated on one adequately financed program. Upon the motion of Kennedy and Fowler, the Council voted to approve that idea and to request the Medical Education Committee to continue to work with the Medical School in the promotion of the Regional Medical Program.

IX. Dr. Fowler reported that nothing had been done on a proposed measles immunization campaign and requested that the Immunization Committee be asked to report to the Council at its next meeting.

X. Dr. Wright Hawkins outlined plans for the 1970 Annual Session and suggested that instead of asking the golf chairman to solicit prizes from merchants and retail men, that the Council vote $50 for the purchase of a cup and a few golf balls to be given as prizes. Upon the motion of Long and Kolb, the Council approved Dr. Hawkins' suggestion.

APPROVED: John Wood, M.D., Chairman

ANSWER—Electrocardiogram of the Month

RATE: 110 RHYTHM: Sinus Tochycordia

PR: .16 sec. QRS: .06 sec. QT: .32 sec.

SIGNIFICANT ABNORMALITIES:

Delay, intrinsicoid deflection, V_{3R}, V_1, RS-T depression, right precordial leods.

INTERPRETATION: Abnarmol
Sinus tachycordio.
Right ventriculor hypertrophy.

ANSWER—Radiology Case of the Month

DIAGNOSIS:

Leptomeningeal cyst in the right pasterior porietol bone.

Film A shows biparietal linear fractures.

Film B shaws partial healing af the anterior portion af bath parietal froctures. However, the enlorged, smoath, dumbbell-shoped defect posteriorly on the right represents erasive calvariol chonges of o leptomeningeal cyst.

DISCUSSION:

Usuolly froctures af the calvorio heol by progressive appositian of bane on either side of the fracture line. Occosionolly, however, the frocture line may widen during the first weeks ofter injury inta o wide cleft, or after many months or years o huge defect moy develop. This widening is due ta the formotion af an underlying leptomeningeal cyst which couses progressive pressure otraphy of the bony edges on both sides af the frocture line. The duro is torn at the same time the overlying bone is fractured, permitting protrusian of the meninges and sometimes port af the broin between the bony edges. Often the brain contiguous ta the cyst undergoes pressure atrophy.

If detected eorly, leptomeningeal cysts con be excised successfully and brain otraphy prevented. Far this reasan, froctures af the calvaria shauld be exomined radiagraphically every twa to three months to detect early widening of the fracture line.

REFERENCES:

1) Lende, R. A., and Erickson, T. C.: Growing Skull Fractures of Childhoad. J. Neurosurg., 18:479, 1961.

2) Taveros, J. H., and Ransahoff, J.: Leptomeningeal Cysts af the Brain Follawing Troumo With Erosian of the Skull. J. Neurasurg., 10:233, 1953.



OBITUARY

Dr. James M. Kolb, Sr.

Dr. James M. Kolb, Sr., of Clarksville died November 16, 1969. He was 64 years old.

Dr. Kolb had practiced medicine in Clarksville since his graduation from the University of Arkansas School of Medicine in 1931. His practice, that of his father, and that of his grandfather, represents more than a century of medical practice in Clarksville by the Kolb family.

Dr. Kolb served as chief of staff of the Clarksville Hospital and is a former president of both the Johnson County and the Arkansas Medical Societies. He was one of two official Arkansas delegates to the American Medical Association for 14 years and the founder of the Medical Education Foundation Fund of Arkansas.

Dr. Kolb is survived by his wife, Reba Garner Kolb; one son; one daughter: a brother, and five grandchildren.

* * *

Dr. Harvey J. Hall

Dr. Harvey J. Hall died November 12, 1969. He was 88 years old. He had practiced medicine in Van Buren and Cleburne counties since 1910.

Dr. Hall was graduated from the University of Arkansas School of Medicine in 1910. From 1950 to 1967, he served on the State Board of Medical Examiners and in the Arkansas General Assembly from 1957 through 1960. He was a member of the Searcy County and Arkansas Medical Societies and the American Medical Association. In addition, he served ten years as Van Buren County Coroner and 28 years as medical advisor to the Selective Service Board.

He is survived by his wife, Sally O. Hall; three sons, Dr. John A., Garner, and Harvey, Jr., all of Clinton; one daughter, and 13 grandchildren.

* * *

Dr. Lewis B. Tilley

Dr. Lewis B. Tilley of Arkadelphia was killed when his airplane crashed November 8. He was 45 years old.

Dr. Tilley, a native of Harrison, had practiced medicine in Arkadelphia for sixteen years. He was a 1952 graduate of the University of Arkansas School of Medicine and was serving as the chief of staff of the Clark County Memorial Hospital. In addition, he was team physician for the Henderson Reddie football team, and a past president of the Arkadelphia Lions Club.

Dr. Tilley was a member of the Clark County and Arkansas Medical Societies and a member of the American Medical Association.

He is survived by his wife, Faye Brian Tilley; two sons, and his parents.



PERSONAL AND NEWS ITEMS

Dr. Peters Honored

Dr. J. E. Peters of the Fort Roots Veterans Administration Hospital in North Little Rock recently shared the second-place award made by the North American Pavlovian Society for his work in genetic-behavioral studies.

Dr. Saltzman Makes Address

Dr. Ben N. Saltzman of Mountain Home recently was the guest speaker before a meeting of the Washington County Association for Retarded Children. The session was held in Springdale.

Dr. Fulmer Receives Award

Dr. John M. Fulmer of Little Rock has been named "Boss of the Year" by the Mabelvale Business and Professional Women's Club. Dr. Fulmer is associate professor of ophthalmology at the University of Arkansas School of Medicine.



From left to right: Mr. Paul C. Schaefer, Dr. and Mrs. Ro s Fowler, and Mr. and Mrs. Graham Nixon, among the honored guests at recent Licensed Practical Nurses' Annual Meeting.

Searcy Surgeon Back From Africa

After spending three years as a medical missionary in Onicha Ngwa, Nigeria, Dr. Henry C. Farrar, Jr., has returned to Searcy. While in Africa, Dr. Farrar managed to build a fifty bed hospital, treat 200 patients a day, preach nine sermons a week, and found five churches. Besides those activities, Dr. Farrar was often used as a peacemaker between the warring—sometimes cannibalistic—Efik and Ibo tribesmen. Dr. Farrar, certified by the American Board of Surgery, is associated with the Medical Arts Center in Searcy.

News From the Auxiliary

Members of the Jefferson County Medical Auxiliary were entertained with a luncheon at the home of Mrs. Teryl Brooks. Her co-hostesses were Mrs. Wayne Buckley, Mrs. George Roberson, and Mrs. John Crenshaw.

The Auxiliary officers for the new year are: president, Mrs. Carl Nash; president-elect, Mrs. Claude Fendley; vice president, Mrs. George Roberson; secretary, Mrs. John Crenshaw; treasurer, Mrs. M. C. Milligan.

Dr. Padberg Honored

Dr. Frank T. Padberg, a Little Rock neurosurgeon, was recently presented an Honorary Recognition award by the Arkansas Nurses' Association at the annual meeting of the Association. Dr. Padberg was nominated for the award for his outstanding work as a member of the American Medical Association Committee on Nursing and as chairman of the Arkansas Medical Society's Committee on Nursing.

Dr. Padberg has served for two years as chairman of this Arkansas Medical Society committee and has been responsible for establishing goals for the Nurses' Association and the Medical Society in liaison efforts between the two organizations. The award is made annually to a

person outside of the field of nursing who has made an outstanding contribution to the nursing profession.

Garland County Doctors Honored

Dr. D. B. Stough served as master of ceremonies at a recent "potluck" supper given by the Medical Assistants Society in honor of their "bosses," the physicians of Hot Springs.

Dr. Fowler Guest Speaker

Dr. Ross Fowler, President of the Arkansas Medical Society, of Harrison was a guest speaker at the 22nd Annual Convention of the Arkansas Licensed Practical Nurses Association held in Little Rock at the Marion Hotel.

Dr. Pollock Is Prize Winning Subject

Dr. George Pollock of Osceola was the subject of an assigned theme by high school student Royce Richardson which won first prize in an award made locally by the Osceola Times.

Dr. Durham "Boss of the Year"

Dr. Thomas M. Durham was awarded the honor "Boss of the Year" by the Medical Assistants Society of Hot Springs.



NEW MEMBERS

Jefferson County Medical Society announces DR. SHERMAN HAYES HOOVER as a new member.

A native of Louisville, Mississippi, Dr. Hoover received his pre-medical education at Southwestern University in Memphis before graduating in 1953 from the University of Tennessee College of Medicine. He interned at the United States Naval Hospital in Oakland, California. Dr. Hoover practiced in Memphis from 1960 to 1969, receiving board certification in internal medicine in 1964.

While in Memphis, Dr. Hoover served also as an instructor in medicine at the City of Memphis Hospitals and the Baptist Hospital teaching service.

A fellow of the American College of Chest Physicians, his office is at 1421 Cherry Street in Pine Bluff.

Superficial Melanoma

J. J. DeCosse and G. McNeer (University Hosp, Cleveland)

Arch Surg 99:531-534 (Oct) 1969

The clinical features of 94 patients with documented superficial malignant melanoma were examined. Of 51 patients with localized superficial melanoma who had not received prior treatment and did not have a regional lymph node excision, only 3 (5.8%) subsequently developed metastasis. When the tumors occur on the face or extremities, exclusive of the hands or feet, wide local excision provides adequate therapy. In the absence of regional lymphadenopathy, lymph node dissection is not warranted. Superficial melanoma on the trunk or on the hands or feet should probably be treated more aggressively. Even when recurrence was present, superficial melanoma seemed to have a better prognosis (50% five-year survivals) than ordinary invasive melanoma.

Surgical Management of Patent Ductus Arteriosus in Infancy

R. J. Cleveland et al (Harbor General Hosp, Torrance, Calif)

Arch Surg 99:516-520 (Oct) 1969

Twelve consecutive symptomatic infants ranging in age from 4 weeks to 10 months underwent surgical closure of an isolated patent ductus arteriosus without a fatality. The recommended approach to isolated patent ductus arteriosus in infancy may be summarized as follows: In the symptomatic infant, early confirmatory cardiac catheterization should be performed; cardiac failure, cardiomegaly, and electrocardiographic demonstration of biventricular strain are definite indications for surgery; and surgical closure of the isolated patent ductus arteriosus may be undertaken safely regardless of the weight and age of the symptomatic infant.

TUBERCULOSIS  ABSTRACTS

Sponsored by Arkansas Tuberculosis and Respiratory Disease Association

LUNG CANCER IN WOMEN

In comparing the characteristics of lung cancer in men and women, it was found that, although the condition is rarer than in men, in women it is less frequently resectable at the time of diagnosis and the prognosis is therefore less favorable.

In an effort to understand the differences in lung cancer in men and women, a study was made of clinical, histological, and biological features of tumors in 83 women and compared with 1,353 lung cancers in men, a ratio of men to women of 16:1. The study covered a 15-year period and was carried out at Morriston Hospital, Swansea, Wales.

HISTOLOGY

Tissue for histological examination was obtained from 56 patients by bronchial biopsy or open operation. Five types of lung cancer were recognized. They were classified as squamous carcinoma, well and poorly differentiated; adenocarcinoma, well and poorly differentiated; and undifferentiated carcinoma. Thirteen of the tumors were squamous cell; 16, glandular; and 27, undifferentiated.

In comparison with some other surveys, the proportion of squamous-type tumors in this series was significantly low and the glandular and undifferentiated carcinomas were high. The relatively small number of cases of squamous-celled carcinoma may be attributed to the lower frequency of chronic irritation in the bronchi of women than in men, whether due to cigarette smoking or to chronic bronchial inflammation in the latter.

At the time the cancer was diagnosed, the mean age of the women was 56 years, approximately two years lower than that of the men who sought medical advice because of a cough. The mean age of men whose cancer was diagnosed as a result of a routine chest X-ray was 61 years. The younger age at diagnosis in women than in men is somewhat surprising in view of the fact that there are more women than men in the older age groups. Since the incidence of lung cancer increases with age, a relatively higher average might be expected in women than in men.

However, a greater proportion of ill-differentiated cancers are found in women than in men. These lesions tend to occur at an earlier age than the differentiated type, thus the age difference may be due to such a factor. Or, the frequency of lung cancer in younger women may be linked to the fact that cigarette smoking is more common in younger than in older women.

SYMPTOMS

Cough, dyspnea, chest pain, and hemoptysis are the principal symptoms of lung cancer. In the series reported, cough was the major symptom at the time of diagnosis in the greatest number of women and men; men complained of dyspnea more frequently than women; chest pain was a common symptom in about the same percentage of men and women. Hemoptysis was more common in men than in women.

Shortness of breath in patients with lung cancer is often the result of a relatively small decrease in respiratory capacity in a person who has respiratory impairment due to chronic bronchitis or emphysema. Since such conditions are less common in women than in men, the lower prevalence of dyspnea in women may be related to the women's general respiratory health.

METASTASES

Extrathoracic metastases were detectable at the time of diagnosis in a significant number of women, 18 of the 56 patients in whom histological confirmation of diagnosis was available having had extrathoracic secondary deposits.

David J. B. Ashley, M.D., and H. Duncan Davies, M.D. *Thorax*, July, 1969 (Vol. 24, No. 4).

Lesions were resected in 11 patients, a lower proportion than in the series of men, 13.4 per cent in contrast to 21 per cent.

Of 56 women whose smoking history was available, 23 (41 per cent) were nonsmokers. The mean age of the smokers was 55 years, slightly lower than that of the nonsmokers, which was 57 years. No significant differences were observed in the distribution of histological types of tumors among smokers and nonsmokers.

On the basis of the data obtained, it appears that lung cancer is less common in women than in men, is less likely to be of the squamous-celled type, and more likely to be of the glandular type or to be undifferentiated. The degree of differentiation is less in women than in men. Lung cancer is likely to occur at an earlier age in women, and extrathoracic metastases are likely to have taken place when symptoms appear. The prognosis of lung cancer in women is worse than in men.

The difference in resectability of lung cancer in men and women cannot be explained on the basis of the histological type of tumor or on the anatomical localization in the bronchial tree, nor can the higher proportion of women patients in this series in whom extrathoracic metastases were present at the time of diagnosis be explained on the basis of the histological type of lesion. An alternative hypothesis is suggested.

HYPOTHESIS

At least one of the genes in the immunological defense mechanism of the body is carried in the X chromosome; mutation at this locus leads to the clinical condition of agammaglobulinemia in which there is a deficiency of a circulating immunoglobulin and also a deficiency of plasma-cell reaction to foreign antigens. With their double complement of X chromosome, women have a lower frequency of agammaglobulinemia and, by inference, a better immunological capacity.

It is suggested that those tumors of the lung which become clinically apparent are the ones in which the multiplying neoplastic cells are able to overcome the immunological defenses of the body which would otherwise treat them as foreign cells and destroy them. In women, with a better defense mechanism, fewer tumors would overcome the defenses, but those which did would be intrinsically more malignant and less amenable to therapy.

This hypothesis would account for the lower proportion of lung cancers in women, which cannot be completely explained by the lower proportion of women who are cigarette smokers. It would account for the reduced frequency with which the tumors are resectable, for the higher proportion of neoplasms of histologically undifferentiated type, and for the generally poorer prognosis in lung cancer in women.

Effects of Thoracic Irradiation of Pulmonary Arterial Perfusion in Man

S. M. Goldman et al (Albert Einstein College of Medicine, Bronx, NY)
Radiology 93:289-296 (Aug) 1969

Seventy-six patients who received pulmonary irradiation for primary or metastatic lung neoplasms or as incidental irradiation for extrapulmonary lesions were studied by means of lung scans and chest roentgenography before, during, and following treatment. Forty percent of the hilar lesions produced extensive impairment in perfusion out of proportion to the size of the tumor, as noted on the roentgenogram. Within six weeks following radiotherapy, arterial perfusion was restored to the lung made ischemic by neoplasm in a significant number of patients (45.6%). The lung scan and the chest roentgenogram are of equal value in detecting early changes of radiation pneumonitis and should be used in a complementary manner. The area of radiation-induced ischemia noted on the scan was larger than the fibrotic changes seen on the roentgenogram in patients who had long-term follow-up. The hemithorax scan was of value in studying markedly underperfused lungs in nine of 14 patients.

February, 1970

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The Congenital Rubella Syndrome

F. Hampton Roy, M.D.*

Definition

The congenital rubella syndrome is a well defined and well described syndrome consisting of ocular, cardiac and other abnormalities resulting from the exposure to the rubella virus during embryonic life.

History

Rubella has been known as a clinical entity from the mid-eighteenth century but has received only sporadic interest due to its mild clinical manifestations and rare complications. It was not until 1941 when Gregg of Australia noted and correlated an occurrence of a rubella epidemic nine to ten months before with malformations in the newborn infant.[1] Numerous reports appeared in the literature after this time. During the following years there were many other reports confirming Gregg's original observation. In 1962 the rubella virus was isolated.[2,3] With ability to definitely culture the virus and a large rubella epidemic which swept the nation in 1964-65, a large number of patients have been collected who have positive rubella cultures. In addition, an effective vaccine against rubella is currently being marketed.[4]

Mechanism of Effects of Rubella

The mechanism of effect of rubella is not fully known. Infants with the rubella syndrome are usually premature by weight although their gestation is usually full term. Rubella should be considered a chronic intra-uterine and extra-uterine viral infection. It has been found that the virus can persist for as long as three years after birth giving a total of three years to six months infection in the infant.[5] During this infectivity after birth it is important to isolate this infant so that females as nursing personnel or friends will not contract rubella in the first trimester and produce abnormalities in their infants.

Clinical Features of Rubella

Three day measles is usually a mild disease more commonly classified as a childhood disease. It occurs most often in spring. Re-infections are rare, but are probably related to the presence of immune antibodies effecting the resistance to infection. The incubation period is eight days and then lymphadenopathy develops. In the prodromal period there is catarrhal inflammation of the upper respiratory tract associated with fever. The rash appears approximately sixteen days after exposure and is maculopapular on the skin of the face, chest, abdomen, thighs and upper extremities. It lasts one to four days and the fever is variable. The period of infectivity occurs during the prodromal period and the exanthem period. Complications are rare.[6]

Clinical Features of the Congenital Rubella Syndrome

The development of defects that occur appear to be highly dependent on the stage of pregnancy in which rubella apparently involve the embryo. The history is notoriously inaccurate as many cases have been reported with inapparent infection of rubella in which definite clinical manifestations of the congenital rubella syndrome are found and the rubella virus isolated. The most serious defects result from rubella that occurs during the first two months of gestation.[7] Rubella contracted during the fifth month of gestation or later was highly unlikely to produce effected offspring.

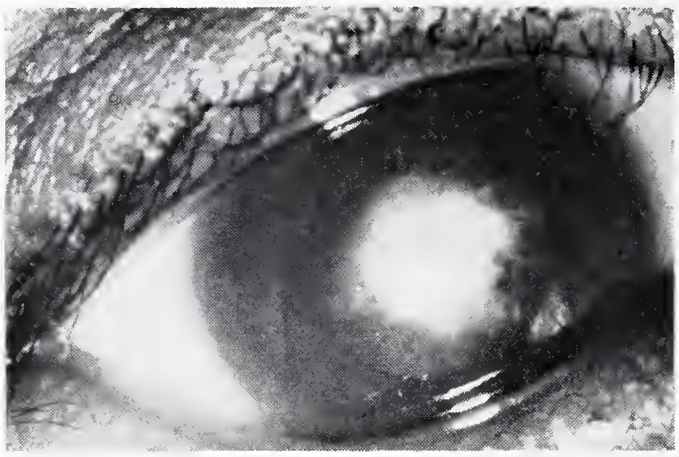
Cardiac defects include patent ductus arteriosus, atrial septal defect, ventricular septal defect, tetralogy of Fallot, coarctation of the aorta, and peripheral pulmonary stenosis.

Ocular findings include cataracts, retinopathy, iris hypoplasia, microphthalmos, glaucoma, nystagmus, and strabismus. Other findings include prematurity, thrombocytopenia purpura, mental retardation, hearing loss, pancreatic insuffi-

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1. Right eye (A.J.)—Rubella virus isolated from feces and urine. Patent ductus arteriosus. Microphthalmos, poor pupillary dilatation, central lens opacity with clear lens periphery. Original 2x.

ciency, esophageal atresia, encephalitis, and radiological bone changes.

If one sees an infant which has unilateral or bilateral cataracts with a microphthalmos in which the horizontal corneal diameter measures less than 10 mm. and the pupil dilates very poorly, one should be highly suspicious of the congenital rubella syndrome.[8] The finding of a low birth weight in a term infant, a cardiac defect and/or hearing defect is further confirmation.

Treatment Prophylaxis

Currently a rubella vaccine is being marketed to expose females to rubella virus to help avoid the devastating complications of the congenital rubella syndrome.[4] Ten cc's IM of human gamma globulin from convalescent rubella patients has been advocated in the past but the results vary depending on the extent of previous contact, the time when the gamma globulin is given, and the antibody content of the gamma globulin administered.[9]

The pregnant woman with a rash is anxious to know what the chances are of her having rubella. The simplest and fastest test is a three hour determination in which viral antibodies to the patient's serum can be detected by hemagglutination inhibitation of avian red cell clumping after rubella virus reagent has been added to the serum.[10] It is suggested that two samples of serum be taken, one immediately at the time of the rash and another three to four weeks later. Acute rubella will produce a rapid rise in antibody titer within a few days after the rash. If the second titer is definitely elevated, proving the occurrence of infection, then the patient may be advised more logically concerning therapeutic abortion.

General Treatment

Infants with the congenital rubella syndrome have a much higher incidence of inflammation of the upper respiratory tract, lungs and kidneys.

Surgical Treatment

The early correction of cardiac, cataract and glaucoma defects should be undertaken when the status of the infant allows.

Rehabilitation

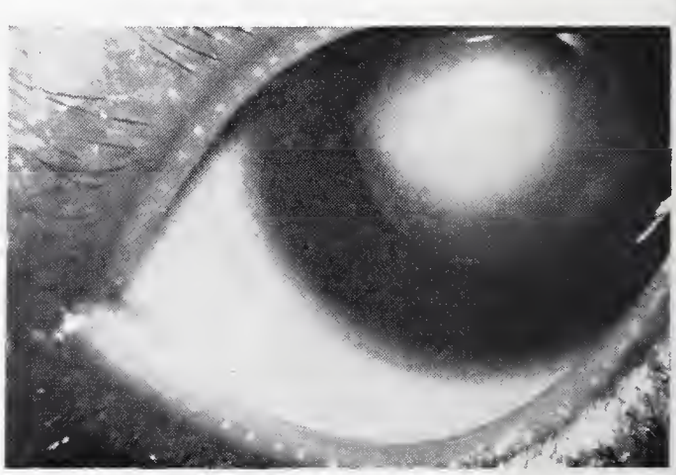
Cooperation of the many medical specialties involved is imperative to handle the defects including hearing, visual and mental retardation. Followup of fifty of the original cases reported by Gregg from Australia twenty-five years after the recognition showed that all had defects attributable to rubella but most had made good socio-economic adjustments.[11] Of the fifty patients studied, forty-eight were deaf, twenty-six had either cataracts or chorioretinopathy, eleven had congenital cardiovascular defects and twenty had minor skeletal defects. This favorable followup is doubtlessly related to the fact that those infants and children with more crippling disability probably died at a much earlier age.

Summary

The congenital rubella syndrome is a well defined and well described syndrome consisting of ocular, cardiac, and other abnormalities resulting from exposure to the rubella virus during embryonic life. A brief discussion of the history, mechanism of effect, clinical features and treatment are included to assist the general physician in managing the congenital rubella syndrome.

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Acute and convalescent serum for hemagglutination rubella titers can be sent to Arkansas Health Department, 4815 West Markham, Little Rock, Arkansas, and will be done free of charge.

Plica Neuropathica

M. H. Simpson and J. F. Mullins (Univ of Texas Medical Branch Hosp, Galveston)

Arch Derm 11:457-458 (Oct 1969)

A Negro woman complained of irreversibly tangled scalp hair, sections of which looked like a tightly woven rug. A hysterical personality and a substrate of kinky hair are important factors in the proposed mechanism for this occurrence. The only remedy was to clip the tangled sections of hair. The major differences between plica neuropathica and plica polonica are discussed.

Acute Pancreatitis Complicating Choledochal Cyst

A case of choledochal cyst presenting as repeated attacks of acute pancreatitis in a woman aged 29 is described. A cyst was palpable in the right upper quadrant of the abdomen and was thought to be a pancreatic pseudocyst. A cholecystogram at this time showed a nonfunctioning gallbladder. Laparotomy was performed and a large choledochal cyst was found rising from the superior duodenal portion of the common bile duct. Cystoduodenostomy was performed.

Medical Aspects of Rural Occupational Health*

Ben N. Saltzman, M.D.

I have been engaged in the practice of medicine in a rural community for more than 23 years. In the early days the major portion of my practice concerned itself with farm people. Today, still a large part of my practice concerns itself with the physical, mental, and emotional ailments of farm people. Now farming is an occupation as important to America as any other occupation. In fact, it is probably the most important work that is being done today. Without the production of food this country could not exist. Early in my practice I realized that farmer's illnesses were peculiar to farmers alone. It is true that most of the time I only saw a farmer when he was involved in a serious accident with resultant injury. However, from time to time I observed that the farm population showed up in my office with various diseases which were at first puzzling, and then became commonplace. Among these were tularemia and undulant fever. I also saw many skin rashes that were difficult to diagnose until I learned something about the various weeds and other forms of plant life with which the farmer dealt.

In recent years my practice has changed towards the care of a retired population which has moved into what was once a predominantly agricultural area. These people indulge in home gardening which often results in the same type of afflictions that affected the early farmers. However, my story will deal more with the occupational diseases that have affected my patients and the patients of other physicians in the rural area.

We are well acquainted with the health and safety problems associated with the use and misuse of agricultural machinery; and we are aware of the dangers inherent in the application of pesticides. However, there are many other rural occupational health problems that are constantly claiming our attention. It is to these problems that I will now address my remarks.

For many years I have sat on the Council on Rural Health of the American Medical Association. I have had the opportunity of consulting with the advisory committee members to our council, particularly the veterinarians, and from them have learned a great deal about the health problems facing our farm population. Farmers for years have served society in a hazardous occupation, with health problems that have long gone unrecognized. From our veterinary friends, I have learned of diseases that I had not associated with farm workers. Animal diseases can and do affect people. Dr. Martin Hines, D.V.M., states that "Farming is the most important job in the world. It is also one of the most hazardous, surpassed only by the mining and construction industries. Rural people generally contract animal diseases through the handling and slaughtering of livestock, or through the consumption of diseased milk or meat. The routes of infection are the skin, mouth and respiratory tract, which offer unlimited opportunities for the exchange of the infectious bacillary, viral, mycotic, rickettsial and parasitic agents. There is a growing list of zoonoses, and farm people are subject to these infections." Dr. James H. Steele, writing in the Archives of Environmental Health, has presented an excellent paper outlining the numerous diseases, and describes methods for control. He has described anthrax, brucellosis, glanders and pseudo-glanders, leptospirosis, salmonellosis, tetanus, tularemia, tuberculosis, parasitic diseases, rickettsial diseases, Q fever, viral diseases, animal pox diseases, pseudo-cowpox (paravaccinia), simian pox, African Green Monkey disease, vesicular diseases, respiratory viral diseases, psittacosis and ornithosis, influenza, Newcastle disease (avian pneumoencephalitis), parainfluenza, rhinovirus infection, reovirus infection, herpes, rabies, fungal diseases, histoplasmosis, coccidioidomyosis, sporotrichosis, cryptococcosis and ringworm.

I am certain that few of you have realized that all of these diseases are animal related. I know that most of you cannot enumerate them all, let alone describe them.

Dr. Hines expressed the hope that "as the medical profession takes the lead in solving such rural health problems as care for the aging, home and farm accidents, prepaid health insurance, nutrition, occupational diseases on the farm, mental health and others, it will consider the veterinarian as a member of the team and will invite him to participate on health com-

* Presented to the 29th Congress on Occupational Health, St. Louis, Missouri, September 15, 1969.

mittees organized to help solve these problems." You, as working members of the medical profession, are thus charged with an obligation to seek the help of many knowledgeable professionals in treating and diagnosing the illnesses of an important segment of our occupational population. I am in complete agreement with Dr. Hines. Having met with, and worked with these men, I can recognize that they have a breadth of knowledge which I cannot hope to encompass myself. We need their help.

Recently, Dr. Wyan Washburn, a past chairman on the Council on Rural Health, spoke to a national conference on his experiences in Vietnam and his exposure to the problem of rabies there. He related his activities to the change in the rabies problem in this country. Whereas, rabies used to be an urban problem, involving mad dogs and cats, it is now a rural problem involving bats, foxes, skunks, and other wildlife animals. Thus our farm populations are chiefly affected. He makes a plea for a better vaccine with a short, simple, safe, efficient and inexpensive process of manufacture. He asks for a better and quicker diagnosis. He insists upon preexposure treatment in high risk populations, including veterinarians, animal and meat men, farmers, hunters, trappers, campers, naturalists, laboratory and research workers, mailmen, electricians, meter readers, spelunkers, lumberjacks, peace corps workers, soldiers and civilians in foreign service and physicians who make house calls. As you can see there are many other occupations involved in this category. In addition, he asks for an educational program to better inform all concerned.

In discussing hazards to the farm population, it is important that the hazards inherent in the use of fertilizers not be overlooked. A most potent fertilizer is anhydrous ammonia and nitrogen solution. Anhydrous ammonia, under pressure can be a most dangerous chemical. Ammonia gas has a very penetrating, pungent odor, and is irritating to the skin, eyes, and to the respiratory tract. Because of these properties it serves as its own warning agent. No one would put up with a high concentration of ammonia voluntarily. However, if it is impossible to get out of the way, serious injury may result. It could be lethal in a few moments even in low concentration. Liquid anhydrous ammonia produces severe burns on contact with the skin because of the freezing effect of the liquid. Plenty of water should be available for the immediate treatment of the burns. Skin irritation and respiratory irritation are the most common effects of exposure.

Farmer's lung syndrome is among the so-called "pneumoconioses" related to exposure to vegetable dusts. These pneumoconioses include mill fever (organic dusts), byssinosis (cotton), baganosis (moldy sugar cane), grain asthma (grain), tamarind asthma (tamarind seed), and weaver's cough (moldy cotton yarn). This is a most interesting disease and is felt to be due to a fundamental defect in the alveoli of the lung giving rise to a classical alveolar-capillary block according to Dr. Paul A. Bunn. He feels that a serious functional defect is produced by immunologic overtones rather than a specific infection. The symptoms of this disease, for those interested, are chills, fever, cough, and dyspnea occurring in agricultural workers within 5 to 6 hours after exposure to moldy forage. Dr. Bunn finds the disease to be widespread and should be considered in agricultural workers who have otherwise unexplained respiratory symptoms.

A syndrome known as silo-filler's disease has been mistaken for farmer's lung. Actually, it is a respiratory involvement due to nitrous oxide inhalation. There is no specific treatment and can heal spontaneously. It is worth noting however, because repeated exposure to nitrous oxide may be fatal. Hence it would be well to avoid the use of nitrous oxide anesthesia in these people.

Diffuse pulmonary fibrosis may be a result of farmer's lung (granulamatus interstitial pneumonitis). The latter you will recall relates to the inhalation of moldy inorganic dusts. The resultant lung disease may be acute, recurrent or chronic. In all cases it is serious.

In the treatment of both, farmer's lung and silo-filler's disease, steroids have been found to be of value to suppress tissue sensitivity and fibrotic reaction. The most important treatment however, is the avoidance of exposure. Antibiotics can help ward off secondary infections.

In addition to the effects of animals and micro-organisms, certain plants may be responsible for disabilities in agricultural workers. Poison ivy and poison oak are prime offenders. Vegetative dusts and pollens cause severe allergic reactions.

There are other toxological and hygienic problems which affect the agricultural worker.

These are: temperature extremes, long exposure to sunlight, field dust conditions, vibration and stress motion in machinery operation, poor nutrition or health care generally, and toxicity of new chemical agents.

Agricultural injuries can result on the farm from many activities outside the realm of farm machinery. The National Safety Council is attempting to help the various states survey their farm accidents to provide data from which to take action on national programs, assist local groups, and direct further research in the most effective direction. This is an attempt to attack the farm accident problem head-on. The result will be a tool for accident prevention.

Now let's go back to the zoonosis that I mentioned in Dr. Steele's work. Some of them are very serious as the causative factors of disease. Others have become quite rare but must still be considered in laboratory workers and animal handlers.

Anthrax is one of the oldest known animal diseases affecting man. It is acquired chiefly from sheep. It is not a serious problem in the United States at the present time. Its treatment involves preventive vaccination, penicillin, and broad spectrum antibiotics.

Brucellosis, acquired from goats, is not a serious problem in the United States at the present time. Its chief preventive treatment is the elimination of infected animals and treatment with broad spectrum antibiotics.

Glanders and pseudo-glanders, acquired from horses, is rare in the United States. However, it is being seen in returning soldiers from Southeast Asia.

Leptospirosis is acquired from cattle, swine and rodents. It is usually picked up from excreted animal urine. Its chief treatment is the prevention of the disease in animals by vaccination. There is no specific treatment in man.

Salmonellosis is a common food born disease found in contaminated food or water. It is often present in hospital epidemics. The epidemics are usually mild but are occasionally fatal. There is no specific treatment. Treatment is chiefly supportive.

Tetanus is found in soil contaminated by animal excretions. You all know of the importance of tetanus immunization. A great deal more needs to be done in the education of workers in the soil. The death rate is slight in the United States at this time.

Tularemia is a disease acquired from wild rabbits and hares. It is also acquired from ticks, deer fly, muskrats, beavers, squirrels, game birds, sheep, contaminated mud and infected laboratory animals. It is acquired by contact with wound infection, conjunctival contamination, ingestion, inhalation, tick bites, and animal bites. It is treated with killed vaccines and live vaccines. Antibiotics, particularly streptomycin, are a satisfactory form of treatment. Streptomycin is longer acting and there are less relapses.

Tuberculosis in its bovine form is transmitted by ingestion, contact and inhalation. It is found in butchers, renderers, and veterinarians. It is disappearing as a public health problem in the United States.

Parasitic diseases are not a real problem in the United States at the present time.

Protozoans affect scientists, technicians and laboratory animal caretakers.

Creeping eruption, a parasitic disease (cutaneous larvae migrans) is found along the southern coast of the United States. It affects utility servicemen, plumbers, carpenters and laborers who crawl under houses. Apparently the infection comes from the defecatory material of dogs and cats where hookwork eggs penetrate the skin. Among the rickettsial diseases is Q fever which affects dairy farmers, livestock handlers, shepherds, sheep shearers, abattoir workers, processors of animal by-products and veterinarians. It seems to be acquired by the handling of the animal placental tissues. The treatment of Q fever includes the use of vaccines, tetracycline and chloramphenical.

Among the viral diseases are: St. Louis, western and equine encephalitis and Colorado tick fever. These affect chiefly laboratory workers, agricultural and forestry workers, geologists, geographers, surveyors, entomologists, and others whose work takes them into endemic areas. Treatment is vaccination against yellow fever, protection against mosquitoes, ticks and mites.

The animal pox diseases include: cowpox which affects the hands of milkers, contagious ecthyma which affects the hands of sheep handlers, pseudo-cowpox (para vaccina) which is a hard nodule found on the hands and arms of milkers, simian pox, which includes the African Green Monkey disease, and affects persons handling the organs and tissues from autopsied monkeys. This is a vesicular disease which affects laboratory workers.

There are the respiratory viral diseases which include psittacosis and ornithosis, rhinoviruses (the common cold), reoviruses (febrile illnesses), and herpes viruses. Psittacosis is found most often in pet shop employees who handle ill parakeets. Ornithosis is found in pigeon fanciers and in people who handle ducks, geese and turkeys. The treatment of choice seems to be the use of antibiotics.

Influenza among animals apparently is not transmitted to man. Newcastle disease is an avian pneumoencephilitis which is rare in the United States. It occurs in chicken vaccinators, poultry processors and producers. The treatment is the control of the disease in birds by vaccination. Para-influenza has little public health significance. This applies also to rhinovirus and reovirus.

Herpes is found as simian virus B. This is found in bites, scratches, aerosols and needle wounds in laboratory workers.

Rabies is becoming a rare disease in this country. There have been only one or two cases annually since the early 1960's. The treatment, of course, is vaccination. However, it is recommended that pre-exposure vaccination be done for anyone at risk.

Among the fungal diseases, ringworm infections are most common.

Histoplasmosis, a serious illness, is found in cases associated with old bird roosts, pigeon and chicken pens, and caves where bat's droppings are present. Laborers tearing down old lofts or cleaning grossly contaminated areas are most often affected.

Coccidioidomyosis, is found in agricultural laborers and servicemen coming into endemic areas. It is also found among geologists and rangers.

Sporotrichosis is found among florists and nurserymen handling sporangium moss. Treatment is fungicidal spraying.

Cryptococcosis is found in pigeon droppings. Ringworm, of course, predominates in dogs and cats and both children and adults are affected. Apart from the advanced nations, three-fourths of the rural population suffers from animal diseases that sap health and cause premature aging. This could affect our own rural workers who are not protected.

I have attempted in the time allotted me to discuss the medical aspects of rural occupational health as it affects us as physicians. This summary is incomplete but it provides a sample of what remains a serious problem to our agricultural workers. We as physicians must provide more than health care. We must be educators as well. We must work with our farm populations to show them the way to a more rational behavior pattern. Thus we can prevent diseases and accidents and help provide for a healthier and happier life. To this end the Council on Rural Health is dedicated; and to this end, you as occupational physicians, must also serve.

Epidermis in Histidinemia

H. P. Baden et al (Massachusetts General Hosp, Boston)

Arch Derm 11:435-436 (Oct) 1969

The response to ultraviolet light and the histologic appearance of the epidermis were studied in two brothers with histidinemia. One sibling demonstrated a decreased minimal erythema dose while the other more-pigmented brother showed a normal response. The epidermis appeared to be normal by light and electron microscopy.

Hyperkeratosis Lenticularis Perstans

E. J. Raffle and J. Rogers (Univ of Dundee, Dundee, Scotland)

Arch Derm 11:423-429 (Oct) 1969

Two women patients with hyperkeratosis lenticularis perstans (Flegel) are described, with particular reference to the clinical and histological features of the keratoses. The histological differences between these lesions and other keratoses found in similar sites, in particular Kyrle's disease and stucco-keratoses are stressed.

Surgical Treatment of Complications of Coronary Artery Disease

John L. Ochsner, M.D.; Robert D. Bloodwell, M.D.; William E. Griffith, M.D.*

Eighty-eight years ago Theodore Billroth,[1] the great Austrian surgeon who has been given credit for remarkable vision, stated, "The surgeon attempting the suture of a heart should lose the esteem of his colleagues." One must assume that Billroth believed surgery of the heart was either technically impossible or immoral. Most surgeons agreed with him and little cardiac surgery was done until the past twenty-five years. During this period the advances in cardiac surgery have been monumental. Despite these rapid and forceful gains, the cardiac surgeon has not dared to operate upon the heart affected by arteriosclerotic coronary artery disease. The treatment of coronary artery disease was left to the internist. However, today the cardiac surgeon is more involved in the treatment of coronary artery disease than he is with any other acquired or congenital malady of the heart.

In yesteryear only minor general surgical operations were done in patients with coronary artery disease. Through the efforts of the cardiac surgeon, major operations unrelated to the heart have been made safe for those with concomitant coronary artery insufficiency. At the present time we are not afraid to operate upon patients with coronary artery disease, and actually advocate operations for its complications.

Acute myocardial infarction is primarily a medical disease; however, strides are being made to treat the often catastrophic state by various surgical measures. Prognosis of acute myocardial infarction associated with prolonged cardiogenic shock is nearly 100% disastrous, and therefore, although the surgical treatment has not proven to be of great value, nothing is lost. Augmentation of the failing circulation by counter pulsation and circulatory assistors is undergoing extensive testing. Tremendous funds are being spent by private industry, universities, and federal investigators who are working together to obtain a suitable method to eventually replace the heart. The principles of synchronized external arterio-arterial counter pulsation for a left ventricular assist are well established.[2] The ideal effects of synchronized arterial counter pulsation are, (1) a reduction in aortic pressure during systole, and by this a reduction in the left ventricular work, and (2) an increase in aortic pressure during diastole to maintain systemic flow and increase coronary flow. Another method of augmenting the circulation is left atrio-aorto by-pass.[3] This method lessens the work of an impaired left ventricle by decreasing the demands upon it, and at the same time, increases systemic flow.

Resection of acute myocardial infarction in the experimental animal has produced beneficial effect.[4] The hypothesis in this treatment is to excise an akinetic focus of irritability which frequently results in ventricular fibrillation. Limited clinical application of these different surgical methods to control the fate of acute myocardial infarction has produced varying, but in general disappointing results. Further investigation will eventually prove the proper place of these various modalities.

This paper describes the methods used and results obtained in the surgical treatment of certain sequelae of coronary artery disease. During a seven-year period, from 1962 through 1968, 179 patients have undergone surgical treatment for various complications of coronary artery disease at the Ochsner Clinic. (See Table I.)

TABLE I
SURGICALLY TREATED SEQUELAE OF CORONARY ARTERY DISEASE
1962 - 1968

Thrombo-embolism	17
Heart block	52
Angina pectoris	100
Ruptured cordae tendinae	3
Ruptured interventricular septum	1
Ventricular aneurysm	6
Total	179

Thromboembolism

Mural thrombi may develop on the wall of the infarcted myocardium. This is a frequent source of systemic arterial embolism, being sec-

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ond only to rheumatic heart disease with mitral stenosis and atrial fibrillation. The infarcted myocardium serves as a nidus for the formation of thrombi which grow by accretion. A clot may detach from the wall of the heart in its entirety or may break off piecemeal. With the unrelenting contractions of the heart, it is amazing that the phenomenon of embolism does not occur more frequently. The severity of this condition depends upon the site of lodgment of the thrombus and the duration between embolism and treatment. Severe and often catastrophic sequelae result when a thrombus embolizes to a cerebral vessel. Emboli to the extremities is associated with a less dismal effect, particularly if lodged at a site where collateral circulation can occur around the obstructed area. The extent of propagation of a thrombus distant to the point of lodgment depends upon time and the degree of collateral flow to the distal part. As the thrombosis propagates distally, it occludes the collateral vessels and exaggerates ischemia.

The acute onset of peripheral ischemia in a patient with a history of myocardial infarction is suggestive of embolism. Angiography will help in differentiating embolism from occlusion secondary to arteriosclerosis, plus delineate the exact area of obstruction (Fig. 1). Once diagnosis of an embolism has been made, the patient is started on anticoagulation therapy, beginning with intravenous heparin which is continued until definitive therapy can be instituted. Anticoagulation limits propagation of the thrombus, thereby lessening the chances of obstruction of the microcirculation of the involved part. The development of the Fogarty catheter has effectively changed the severity of the treatment and prognosis of this condition. Whereas in the past correction of systemic embolization often necessitated a time-consuming and hazardous operation, today this ingenious instrument has allowed the surgeon, with minimal effort, to completely reverse the obstructive circulatory status. These operations can be performed under local anesthesia and are well tolerated by the

TABLE II
THROMBO-EMBOLISM AS A COMPLICATION OF MYOCARDIAL INFARCTION

Location	*No. Patients*
Cerebral	1
Upper Extremity	4
Aorto-Iliac	8
Lower Extremity	4
Total	17

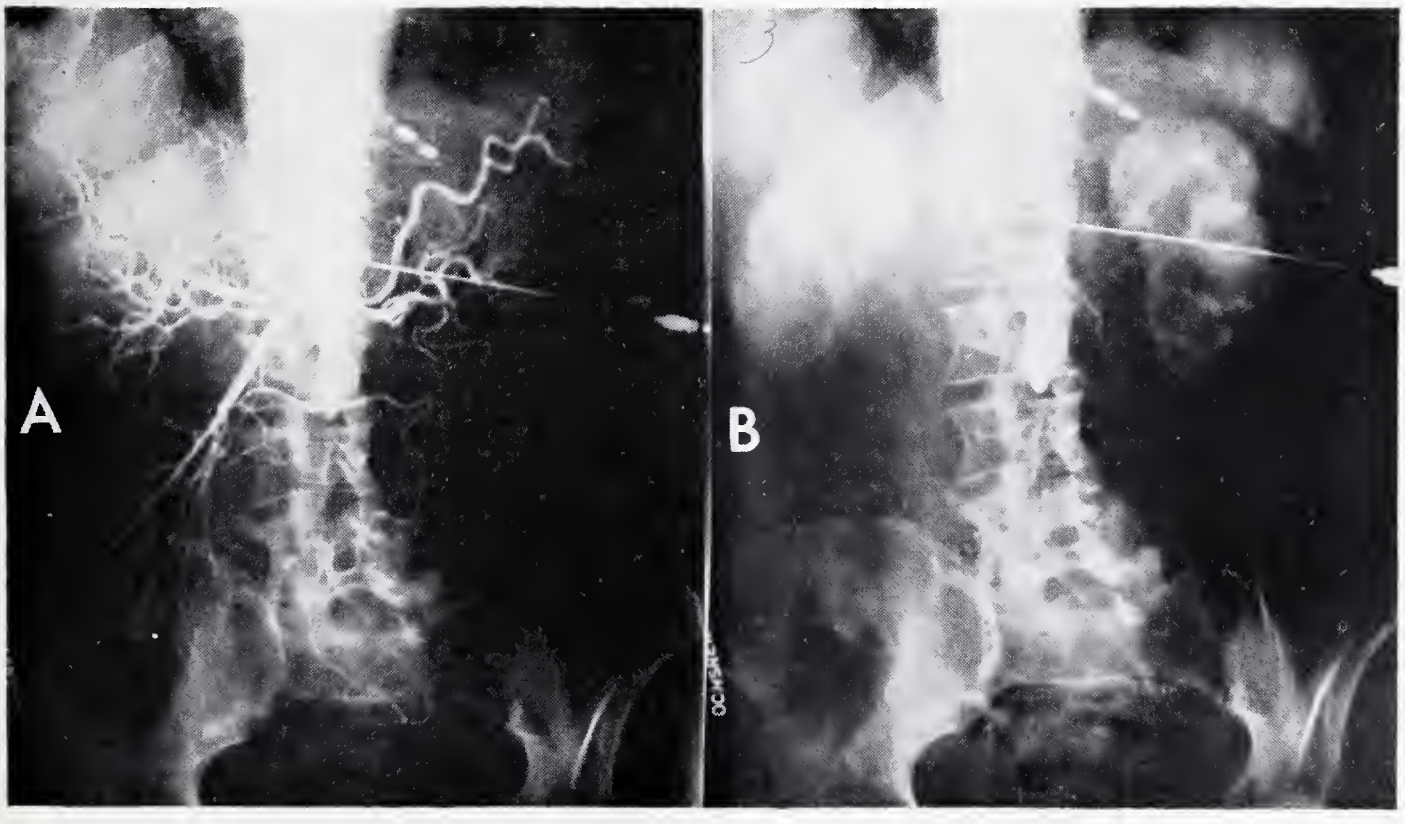


Figure 1

Translumbar aortogram. (A) Shows complete occlusion of distal aorta with early collateral circulation through visceral, but not lumbar, arteries. (B) Delayed film shows dye remaining in distal aorta after disappearance in smaller vessels. The interpretation of this sequence of angiograms suggests acute aortic occlusion from embolism.

critically ill. Aortic, iliac, femoral, and popliteal emboli can all be handled through a small arteriotomy in the common femoral artery.

Seventeen patients underwent embolectomy during this study. (See Table II.) The one patient with a cerebral embolus died; one elderly patient died of renal failure following aortic iliac embolectomy, and one patient lost a lower extremity. The others are alive with functioning limbs. The results in embolectomy appear to be directly related to the time interval between embolism and treatment.

Heart Block

Coronary artery disease has been widely accepted in the past as the predominant cause of complete heart block, but the evidence for this diagnosis is often unconvincing. The diagnosis of patients with heart block secondary to coronary artery disease rests on clinical and electrocardiographic evidence and the difficulties of confirming such an impression are many. It is likely that most heart blocks are not secondary to coronary artery disease. It appears that patients with severe ischemic heart disease would not likely survive the stress of repeated Stokes-Adams attacks with decreased coronary blood flow to an already impaired myocardial circulation. This hypothesis is supported by the fact that antemortem and postmortem coronary angiography has shown normal coronary vessels in the majority of patients with heart block. Also serial histological sections of the conducting tissue revealed degenerative changes in this specialized tissue as the cause of heart block in most patients.[5]

Although ischemic changes may not be the most common cause of heart block, it certainly is the etiologic factor in many instances. Complete heart block complicates 5% of myocardial infarcts and is a grave prognostic feature. It accompanies posterior infarction more commonly than anterior infarction. The incidence of heart block secondary to chronic ischemic changes to the conduction system is unknown, but it is safe to assume that it does occur.

Artificial pacing of the heart by electrical stimulation is one of the earliest examples of the extension of the use of electronic apparatus beyond its usual role in clinical medicine. Numerous pacemakers have been manufactured by various companies. With time there has been great improvement, both in efficiency and in reliability of pacemakers. Today most pacemakers are relatively free from electrical malfunction and electrode instability. Originally pacemakers were designed as fixed-rate units, causing stimulation at a predetermined rate. It remains the choice of many physicians today. The most physiologic type of pacemaker is that triggered by the P wave. Its principal advantage lies in its ability to stimulate normal heart action by synchronizing in proper time and sequence atrial and ventricular contractions. The P wave is fed to the electric component from an atrial electrode sutured to the epicardium. After a fixed A-V delay an output pulse is transmitted to a ventricular stimulating electrode, thus achieving physiologic, atrial-ventricular contraction. This type of pacer is particularly useful in the young and active, as well as those with intermittent heart block. Its principal drawback lies in its complexity with the inherent electronic malfunctions. We believe the most reliable and effective pacemakers are those which operate on "demand" or "standby" principle. The pulse generator has a sensing circuit which responds to the appearance of the QRS potential. This QRS signal inhibits the output of the pulse generator for an adjustable period. It is particularly suited in cases of intermittent block, and in effect, will stand by in the presence of a normal sinus rhythm and will stimulate during periods of block. It precludes competitive rhythms and eliminates the potential danger of the pacer pulse falling within the vulnerable period.

TABLE III
PACEMAKERS USED IN TREATMENT OF CHRONIC HEART BLOCK

Type Pacemaker	*No. Patients*
Epicardial	
Fixed Rate	8
Adjustable Rate	3
P-Wave Trigger	5
Transvenous	
Fixed Rate	3
Adjustable Rate	7
Demand	26
	52

We have treated 52 patients with heart block and histories of myocardial infarction. (See Table III.) In our early experience, pacemaker electrodes were applied to the epicardium, which necessitated a thoractomy. In the past few years, except in rare instances, we have exclusively used the transvenous electrodes. There have been no

complications with this method outside of early dislodgment of the electrode. Particular care must be taken to measure the threshold at the time of insertion of the electrode to insure proper placement. Since employment of the transvenous route, there have been no hospital deaths, and except for a single patient in whom the electrode repeatedly dislodged, a thoractomy has not been necessary.

Angina Pectoris

Angina pectoris is by far the most common complication of coronary artery occlusive disease. It is a poorly understood condition, with a voluminous literature. Medical treatment has varied from complete bedrest, with absence of all activity, save the essentials of life, to an encouragement of activity to tolerance with supportive medication.

Due to a lag in diagnostic methods sufficient to ascertain the true status of the coronary vessels, surgical attempts at myocardial revascularization could not be evaluated. Because Vineberg's persistence in the internal mammary-myocardial implantation continued to the era of selective arteriography, recognition was finally achieved.[6] Development of selective coronary cineangiography provided a means of determining the true anatomic status of the coronary circulation, and eventually proper selection of patients and surgical procedures.

Our interest in myocardial revascularization began slightly over four years ago and since that time various methods of revascularization have evolved. Whereas in our early experience revascularization was confined to those patients with major obstructive disease limited to the anterior descending branch of the left coronary artery, today it is extended to hearts in which all vessels have major obstructive disease. Emphasis has shifted from indirect methods of revascularization to immediate, direct revascularization (Fig. 2). Today our direct procedure of choice is aorto-coronary artery by-pass, utilizing an autogenous vein graft. This is often supplemented by internal mammary-myocardial implant. With the use of extracorporeal circulation, hypothermia, and inducted ventricular fibrillation the vein graft can be employed to by-pass any of the three major coronary vessels. Arteries in the range of 1.5 mm have been surgically corrected.

Much has been learned through postoperative

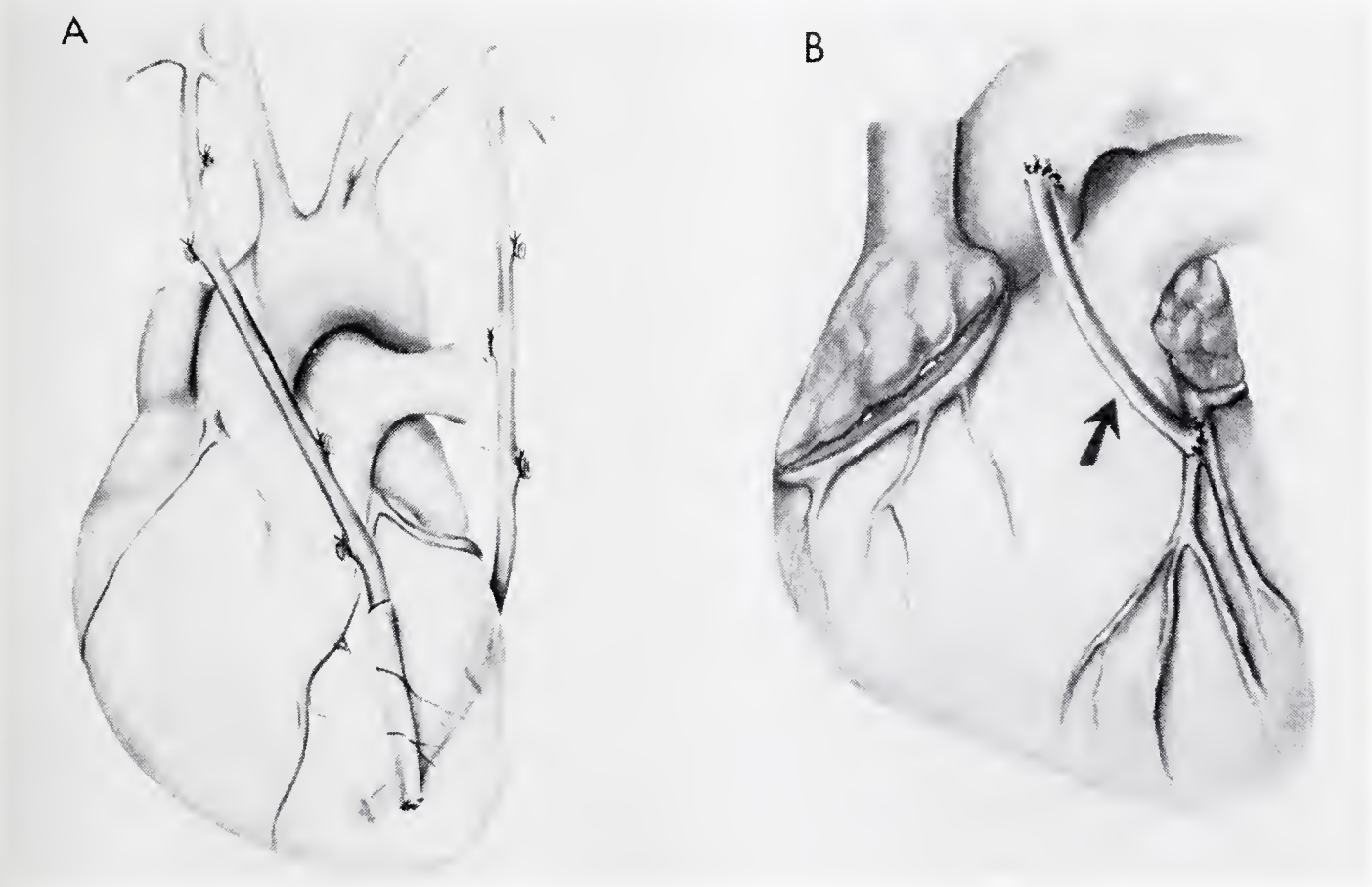


Figure 2

Drawings demonstrate methods of myocardial revascularization. (A) Indirect or delayed revascularization. Bilateral internal mammary-myocardial implantation. (B) Direct or indirect revascularization. Aorto-coronary artery by-pass with autogenous vein graft.

clinical and laboratory evaluation. It has become evident that the best results with indirect procedures are obtained with revascularization of the anterior aspect of the left ventricle. Direct methods give an immediate and prolonged increase in blood supply to the heart. The mortality rate has been acceptable and it appears that longevity is increased through these operations.[7]

Ruptured Chordae Tendineae

Rupture of the papillary muscle after healing of a myocardial infarct causes an acute and alarming degree of mitral insufficiency. Much more common is the rupture of one or more chordae tendineae. Often it is diffcult to determine the true cause of ruptured chordae tendineae and the condition is frequently classified as "idiopathic." Ruptured chordae tendineae may be related to ischemia of the chordae or papillary muscles, congenital anomalies, bacterial endocarditis, or trauma. The involved leaflet, or portion of it, regurgitates into the left atrium causing mitral insufficiency.

It is often possible to reconstruct the valve because intrinsic disease of the leaflets is rare and they are usually pliable. If the rupture is of long duration, dilatation of the mitral valve ring usually coexists. In reconstruction, ideally the involved leaflets or chordae are sutured directly to their muscles of origin. However, such techniques often produce shortening of the leaflet, and consequently advancement of the involved leaflet. An alternate reconstruction method has been plication of the flail leaflet, combined with annuloplasty to approximate the leaflets. In patients who have diseased hearts as the result of coronary artery insufficiency, it is most important that a precise repair be initially performed, and even minor amounts of mitral regurgitation may not be tolerated. In our hands reconstructive methods have not been exact and it has been our practice to replace these valves. Valve replacement can be performed more efficiently and expediently and this is paramount in the desperately sick.

Ruptured Intraventricular Septum

Rupture of the intraventricular septum is the least common but most serious of the complications of acute myocardial infarction which require surgery. The time interval between myocardial infarction and rupture is usually between four and twelve days, which correlates with the histological findings of maximal degeneration. Once rupture has occurred, the prognosis is poor and the majority die within the first 48 hours.

The typical clinical picture is that of acute congestive heart failure in a patient known to have had a myocardial infarction and the development of a loud systolic murmur, usually heard best over the apex. The defects are usually located in the apex of the septum. Acute occlusion of the left coronary artery, which supplies the anterior two-thirds of the septum, accounts for the majority of the ruptures. There are advantages in delaying surgery until two or three months following rupture. At this time the rim of the defect is composed of firm fibrous tissue and technical problems of suturing an area of fresh infarction are avoided. However, the need and time of repair depend upon the patient's response to medical treatment and the physiologic data at cardiac catheterization. The ultimate outcome does not depend upon the time of repair. Surgical correction of the defect is recommended when the patient no longer responds to vigorous medical treatment. At this time cardiac catheterization should confirm the diagnosis of a large shunt which has significantly burdened the heart. We have encountered this situation only once. A 56-year-old woman remained in cardiac decompensation and the septal defect was repaired with a patch four weeks following myocardial infarction. She has been asymptomatic since closure of the defect.

Ventricular Aneurysm

Ventricular aneurysm may or may not be of functional significance. The degree of dyskinesis, akinesis, and size of the aneurysm determine the hemodynamic impairment. The impairment may be due to the hemodynamic changes which result from the aneurysm or may be the result of coronary artery insufficiency. In order to determine the significance of both, cardiac catheterization coupled with angiographic studies of the coronary arteries and left ventricle are important. The most common site of post-infarction aneurysm is the antero-lateral surface of the heart, and in 5 of our 6 patients, this was the location of the aneurysm (Fig. 3).

Total excision of the aneurysm, utilizing extracorporeal circulation, is the preferred method of treatment. There were no deaths in our 6 patients and all have been greatly benefited from the aneurysmectomy.

Summary

Many complications of coronary artery insuffi-



Figure 3

Roentgenogram of chest shows large aneurysm arising from anterior and lateral wall of left ventricle.

ciency are amenable to surgical correction. In a seven year period, from 1962 through 1968, 179 such patients have been treated. The proper selection of time and type of treatment is imperative for success. Cooperation between the cardiac surgeon and his medical colleagues in this selection can restore many cardiac cripples to a useful life.

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DEPARTMENT OF

PEDIATRICS

UNIVERSITY OF ARKANSAS
SCHOOL OF MEDICINE

Grand Rounds

Tetanus

Discussor—Edwin R. Hughes, M.D.*
Participant—Isao Sekine, M.D.**
Editorial Director—Jerry G. Jones, M.D.***

Case Presentation

History

DR. SEKINE: This 8-year-old Negro female was well until one day prior to her admission to the University of Arkansas Medical Center on November 19, 1969, when she complained of pain and stiffness of head, neck, and back. She went to bed still complaining of dull aching pain, but slept well that night. At 7 a.m. on the day of admission she got up from bed, took several steps, and fell backwards with her head and back extended. Although conscious, she remained spastic and stiff. She had difficulty in swallowing and vomited after eating. She was taken to her community hospital, where she had a normal spinal tap. She was given 35 mg Demerol and 250 mg Robaxin. Her mother could not recall any wound or injury except that she lost three teeth one day prior to admission. The past history is significant in that she lives in a rural area and had never received any immunizations.

Examination

This was a well-developed female in opisthotonic position. Temperature was 98.4°, pulse 90, and respirations 22. Her mouth was difficult to open, and displayed copious secretions. The neck was markedly stiff. The abdomen was rigid. Extremities were stiff and in a flexed position. There was generalized muscle spasm. The remainder of the physical examination was not remarkable. No wounds were identified.

Laboratory Data

Urinalysis on admission was normal. Hemoglobin was 10.7 gm%, hematocrit 33%, WBC 6.6, Electrolytes: Na 137, K 4.6, CO_2 28, Cl 99, Ca 9.1, P 5.0 mEq/L; BUN 12, and FBS 78 mg%. A chest X-ray on admission was within normal limits.

Hospital Course

Tetanus immune globulin human (Homo-Tet) 1,000 u intramuscularly, Robaxin 250 mg intravenously every 6 hours, aqueous penicillin 600,000 u every 6 hours intravenously, and "cath mix"* 1.0 ml intravenously were given immediately. She was placed in quiet surroundings and maintained on intravenous fluids. On the second day an additional 3,000 u Homo-Tet intramuscularly was given. Sedation was achieved with phenobarbital 40 mg every 4 hours intravenously. Robaxin 250 mg was given every 4 hours intravenously for muscle relaxation. She continued to have momentary tetanic contractions. Phenobarbital was increased to 60 mg every 4 hours intravenously, and tetanus toxoid 0.5 ml was administered subcutaneously. She complained of pain in her neck and back, and sleeplessness.

On the 4th hospital day Valium 0.5 mg intra-

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* A mixture of meperidine 25 mg, promethazine, 6.25 mg, chlorpromazine 6.25 mg used as a premedication for cardiac catheterization.

venously was administered with some lessening of muscle spasms. She could swallow ice chips and ice cream. She continued to be afebrile. Presently she is receiving phenobarbital and Robaxin.

Discussion

DR. HUGHES: This 8-year-old girl had a chief complaint of "fell back on the floor and threw head backwards." The presenting complaint suggests a seizure. As the *signs and symptoms* are described, it becomes clear that her opisthotonus was probably due to tetanus. Trismus ("lock jaw") is found in all patients with typical generalized tetanus. Tetanus can occur as localized ascending spasms involving one extremity rather than generalized tetanus. The form of the disease may depend on the route of spread of the toxin. Thus, if the toxin gets to the central nervous system through the blood stream, generalized opisthotonus with convulsions and generalized spasms may occur. If it spreads via the nerve routes, only the one leg or one extremity is involved.

Our patient was taken to a private hospital and had a normal lumbar puncture. The *diagnosis* must be a clinical one, and when a patient with this type of presenting picture has a normal lumbar puncture, the diagnosis is tetanus.

The *incubation time* for tetanus in several recent series is described to be from 1 to 54 days. The dental injury in this child occurred one day prior to admission, so this injury could have provided the route of entry of the *Clostridium tetani*. However, it is likely she lost her teeth because of a tetanic spasm, and this was not the inoculation site.

She had never received any *immunizations,* which is unfortunate. However, public health workers are not doing too badly in this country. In children under 10 years of age, only 3 cases of tetanus were reported in the United States in 1965 and 1966. If one estimates that at least 30 million children were vaccinated in the United States, this gives an incidence of tetanus in this vaccinated population of 1 in 10 million children. The protection rate may be better than in World War II, when there were 7 or 8 cases of tetanus reported in a total of 10 million soldiers.

In 1965 and 1966, 507 cases of tetanus were reported in the United States. Fourteen states in the West and Northeast reported not a single case. The majority of tetanus was in the South Atlantic and Southcentral parts of the United States. The reason for this *geographic distribution* is not clear. It has been speculated that the level of the spores is much higher in the soil of the Southcentral part of the United States, the moist climate contributing to their survival. Therefore, injuries in this area of the country may be more likely to be accompanied by an inoculation. The level of public health activity also may be an important factor in the geographic distribution.

At the time of admission, our patient was afebrile, which is usually the case. Her mouth could not be opened—spasm of the Masseter muscles is a characteristic clinical sign of lockjaw or tetanus. Her neck was stiff, the abdomen was rigid, and she was in an opisthotonic position. Her chemistries were normal. There was little question at that point about the diagnosis.

The therapy of tetanus is about as satisfactory as it was when Hippocrates was treating the wounded soldiers at Troy. Thus, the *prognosis* has not improved appreciably since 1900. The incidence of tetanus has dropped, so the overall mortality has declined. However, the fatality rate in patients with tetanus is still over 50% (68% in 1965 and 1966 in the United States). The fatality rate is related to age. The mortality of neonatal tetanus is 75% and the mortality in patients over 50 is also 75%. Most patients with tetanus expire in respiratory failure either from spasm of the larynx and intercostal muscles or from complicating respiratory infections.

If one excludes neonatal tetanus, which comprises 10% of tetanus cases, the mean age of the remaining patients in the United States in 1965 and 1966 was 48 years. Relatively few cases occur in children between the newborn period and age 10. The incidence rises sharply in individuals beyond age 26. To prevent tetanus in the adult, we must re-immunize the adult population. Tetanus toxoid should be given to adults every 10 years.

If we have failed to prevent the disease, what is the *treatment* we provide? First, we block the circulating toxin to prevent it from reaching the central nervous system. This should be done early. Human tetanus immune globulin, 6,000 units, can be given intramuscularly. Human immune globulin is never given intravenously. Some recommend that this human antibody be given in smaller doses such as 600 units a day for 10 days, but this does not alter eventual outcome. Whether the antibody can actually pull

the toxin off the central nervous system cell has not been settled, but it would appear that it probably cannot alter the action of the fixed toxin. At the time of giving antitoxin, tetanus toxoid should be administered in the opposite extremity. Although a patient has been given antitoxin, the measured antibody titer at 14 days will be similar to the titer in children receiving their first dose of toxoid. Early administration of toxoid is recommended and provides rapid immunization of the patient.

The second aspect to consider in the therapy program is removal of the source of toxin. Debridement of any wound should be carried out. Antitoxin may be injected around the wound, although this measure has not been proven to be effective. Another means of removal of the source of toxin is by administration of at least a million units of penicillin daily to kill the *Clostridium tetani*.

The third component of therapy is sedation of the patient in order to achieve muscle relaxation. Robaxin had been given in another hospital and was repeated intravenously here. She was also given "cath mix." Subsequently she was placed on phenobarbital, and in the first 24 hours she received 5 mg/Kg of phenobarbital. This dosage did not relax her appreciably. One should rapidly push the patient into a relaxed state if possible, avoiding depressing him so far that secretions pool in the pharynx. Good relaxation helps prevent laryngospasm and tetanic spasm of the intercostal muscles.

One way to obtain relaxation is to paralyze the patient and put him in a respirator. This method has been tried in controlled series of patients and does not improve survival. With complete paralysis of the individual, cardiovascular effects are such that one cannot maintain the patient over weeks.

If one gives small doses of Robaxin to obtain muscle relaxation, he is probably not going to do any harm, but likewise no good. If Robaxin is used, it should be given to the point that muscle relaxation is obtained. This requires large doses intravenously and may be necessary in severe cases. When instituted, tracheostomy and assisted ventilation are usually necessary.

Questions and Comments

QUESTION: What is the value of placing the patient in a quiet, darkened room to decrease the triggering of spasms?

ANSWER (DR. HUGHES): Certain ceremonials are appropriate in medicine. However, if the patient is properly relaxed, he may not need a dark and soundless room. In any case, the nurse should be able to see the patient, suction him, draw blood, and turn the patient. Around-the-clock careful nursing care probably contributes more to survival than does any specific therapy regimen.

COMMENT (DR. BOELLNER*): I would like to disagree with giving only barbiturates to patients with tetanus. Barbiturates produce less muscle relaxation than does Valium and may be associated with depression of respirations as well as blood pressure. Valium may be used in large doses and does not depress vital signs. I would prefer adding Valium to the barbiturates to achieve sedation and relaxation. Of course, it must be remembered that Valium potentiates the action of barbiturates so that Valium should not be used if maximum doses of barbiturates are given.

COMMENT (DR. BORNHOFEN**): No difference in mortality in tetanus has been noted whether patients receive tetanus antitoxin or not. No evidence exists showing that debridement to remove the source of the toxin diminishes the mortality. In agreement with Dr. Boellner, I do not like to use barbiturates alone to obtain muscle relaxation. Patients with tetanus are almost comatose when relaxed with barbiturates, and they may require tracheostomy for ventilation. Muscle relaxation is best obtained by blocking and internuncial neuron, where Valium appears to act. Robaxin also acts on the internuncial neuron and can be useful when used in adequate amounts.

Conclusion

DR. HUGHES: Tetanus is not an uncommon disease in spite of the prevalence of immunizations today, and it occurs more frequently in the older age groups at the present time. The prognosis remains poor. Although the diagnosis is relatively simple, the therapy remains controversial. The best defined therapy is sedation with barbiturates combined with the administration of diazepam or muscle relaxants.

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Erythropoietin Release After Aortic Coarctation in the Baboon

G. P. Murphy et al (666 Elm St, Buffalo, NY) *Arch Surg* 99:524-528 (Oct) 1969

Supra- and infrarenal coarctation of the aorta in the adult baboon results in a transient decline in renal plasma flow. Glomerular filtration rate is depressed in the suprarenal group. Systemic blood pressure is elevated acutely in both types of coarctation but is later increased only in suprarenal coarctation animals. Erythropoietic stimulating factor (ESF) is released acutely in both types of coarctation but to the greatest degree in the suprarenal type. ESF elevations relate directly to the observed renal hemodynamic changes. Blood pressure and ESF are elevated only in the suprarenal coarctation group beyond three weeks postoperatively.

Experimental Human Exposure to Methyl Chloroform Vapor

R. O. Stewart et al (Marquette Univ School of Medicine, Milwaukee)

Arch Environ Health 19:467-472 (Oct) 1969

Eleven human subjects were experimentally exposed to 1,1,1-trichloroethane vapor (500 ppm) for periods of 6½ to 7 hr/day for five days. The subjective untoward responses reported were mild, inconsistently present, and of doubtful clinical significance. The only adverse, objective response was an abnormal modified Romberg test observed in two of the subjects during their exposure periods. Analysis of the exhaled breath of the human subjects by infrared or gas chromatographic techniques provided a means with which to unequivocally establish a diagnosis of exposure.



SURGERY at the UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE*

*Under the direction of Gilbert Campbell, M.D., Professor of Surgery.

Spontaneous Rupture of the Esophagus: the Boerhaave Syndrome

G. Doyne Williams, M.D., and Kent C. Westbrook, M.D.*

Baron Van Wassenaer, the grand admiral of Holland, was an obese gentleman given to excesses of food and drink. He reportedly would eat to capacity, induce vomiting, and eat again. In 1724, he did this once too often: sudden severe left chest pain was followed by dyspnea, cyanosis, and death 18 hours later. The autopsy surgeon, Dr. Herman Boerhaave, found bilateral empyema, mediastinal emphysema, and a laceration of the lower left esophagus. This catastrophe thus became known as the Boerhaave syndrome and its diagnosis and management remain challenging 245 years later.[1]

Bowles, in 1900, suggested the now accepted surgical therapy of immediate mediastinotomy with direct suture of the rupture; a formidable procedure for the then young discipline of thoracic surgery.[2] Collis first attempted this thoracic approach in England in 1943, but the patient succumbed.[3] Foggitt, in 1946, attempted suture repair of the laceration via an abdominal approach without success.[4] Finally, in 1946, N. R. Barrett of England and Theron Clagett of the United States obtained survivors of spontaneous esophageal rupture by left thoracotomy, direct suture repair and chest tube drainage.[5,6] To date, approximately 300 cases have been recorded in the world literature with a reduction in mortality rate from 100% for those treated conservatively, to 20% for those treated with the surgical approach to be described.[7]

*From the Department of Surgery, University of Arkansas Medical Center, Little Rock, Arkansas 72201.

Case Report

J. W., a 69-year-old white male (#26 48 49), presented to University Hospital at 9:00 p.m. on June 27, 1969, with severe lower left chest pain. The patient had eaten a large evening meal, mowed his yard, and then rapidly drank a large quantity of ice water. Shortly thereafter, he experienced vomiting and severe lower thoracic and epigastric pain.

Admission blood pressure was 144/80, pulse 124/minute, temperature 98.4°, and the respirations were shallow at a rate of 26/minute. Physical examination was essentially within normal limits and a presumptive diagnosis of myocardial infarction was made. The patient was admitted

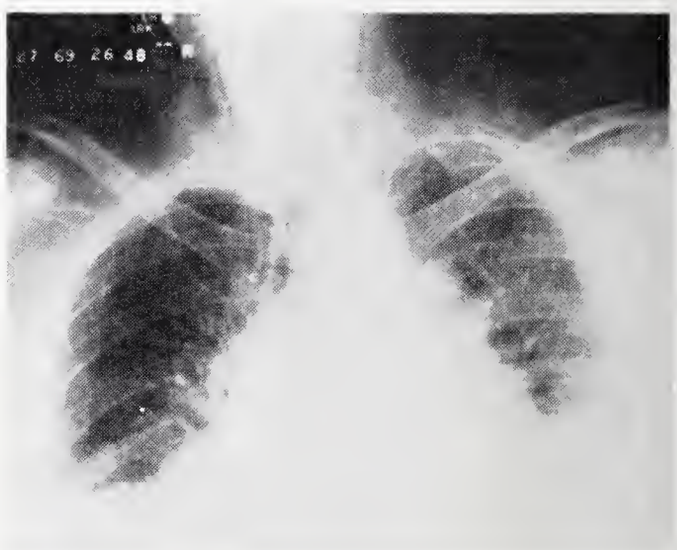


Figure 1

Admission chest X-ray. The arrow indicates air in the cervical tissues.

to the Medical Service and a chest X-ray (Figure 1) and a normal electrocardiogram were obtained on admission. The patient was treated with nasal oxygen and sedation with little relief. Two more electrocardiograms were obtained during the night and remained normal. By the next morning, the patient's pain was much more severe. Respirations were more shallow and had increased to 36/minute and the blood pressure had fallen to 80/60 with a pulse of 140/minute. The serum amylase was within normal limits. Another chest X-ray was obtained and surgical consultation requested. A presumptive diagnosis of esophageal rupture was made on the basis of suspected mediastinal air on X-ray (Figure 1) and the symptoms and clinical course.

Exploration via a 7th interspace left thoracic incision revealed a marked pleural reaction and approximately 1000 cc. of cloudy brownish-white fluid. The lower left mediastinal pleura was then opened and a 7 cm. rent was found in the muscularis of the left lower esophagus with a 3.5 cm. mucosal tear (Figure 2). Bits of tomato,

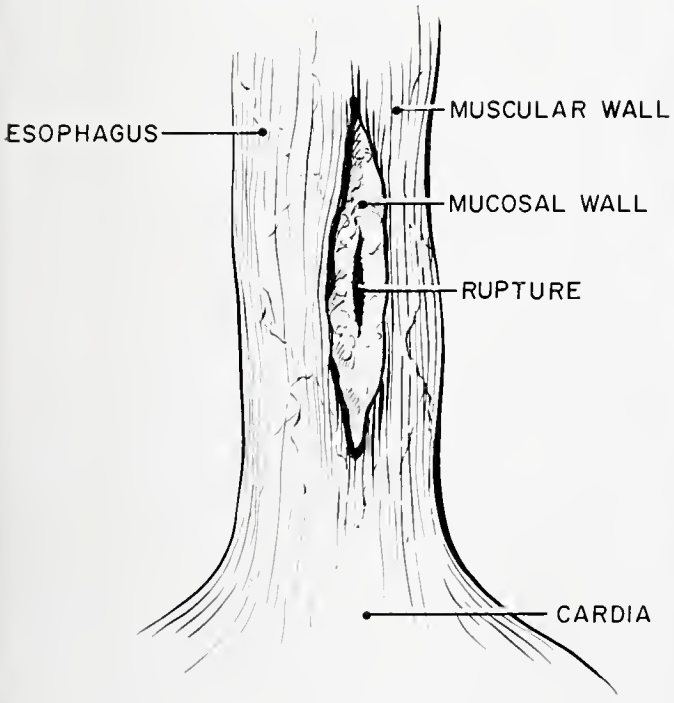


Figure 2
Drawing of the tear in the lower left esophagus.

beans, corn and onion were dispersed through the mediastinal tissue planes. All foreign material was debrided and the left chest was irrigated with 4 liters of warm saline solution. The esophageal laceration was then closed using the Thal gastric fundal patch technique (Figure 3).[8] Two large (40 F.) chest tubes were placed in the left chest and attached to water seal drainage.

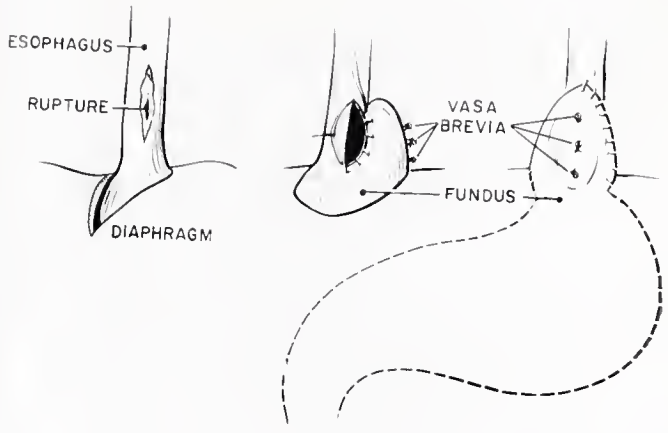


Figure 3
Thal technique using a gastric fundal patch to close the laceration.

The patient was stable postoperatively and received vigorous coughing and deep breathing every 4 hours. He was ambulatory on the second postoperative day and tube feeding with a Levine tube was started. A barium swallow on

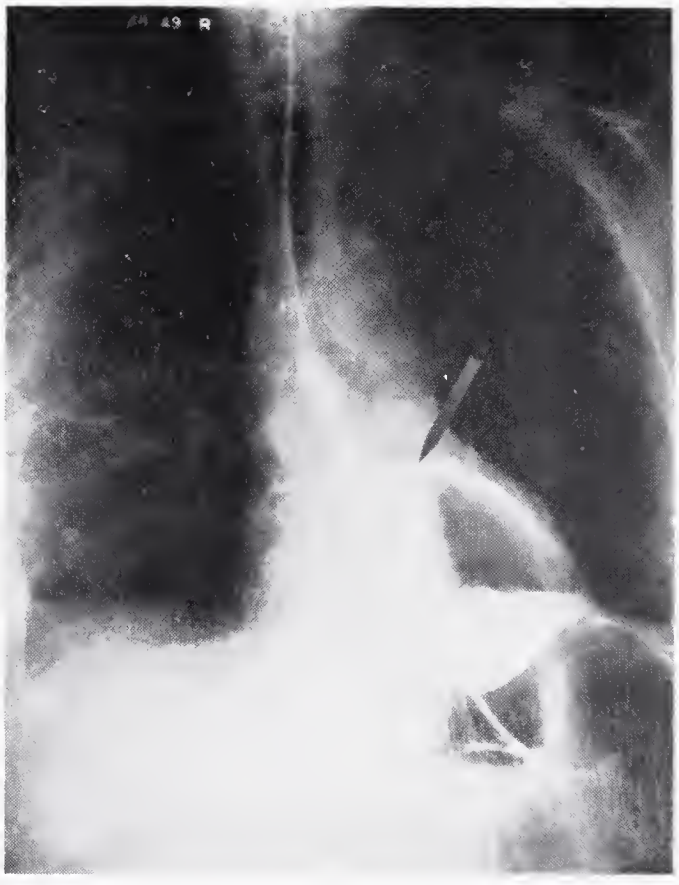


Figure 4
The arrow indicates a small leak just above the Thal patch. The Levine tube is seen extending through the esophagus into the stomach.

the 13th postoperative day revealed a small leak on the left just above the Thal patch (Figure 4). This drained adequately via the esophagocutaneous fistula formed by the chest tubes. On the 16th postoperative day, a Hurwitz tube gastrostomy was done (Figure 5). This allowed con-

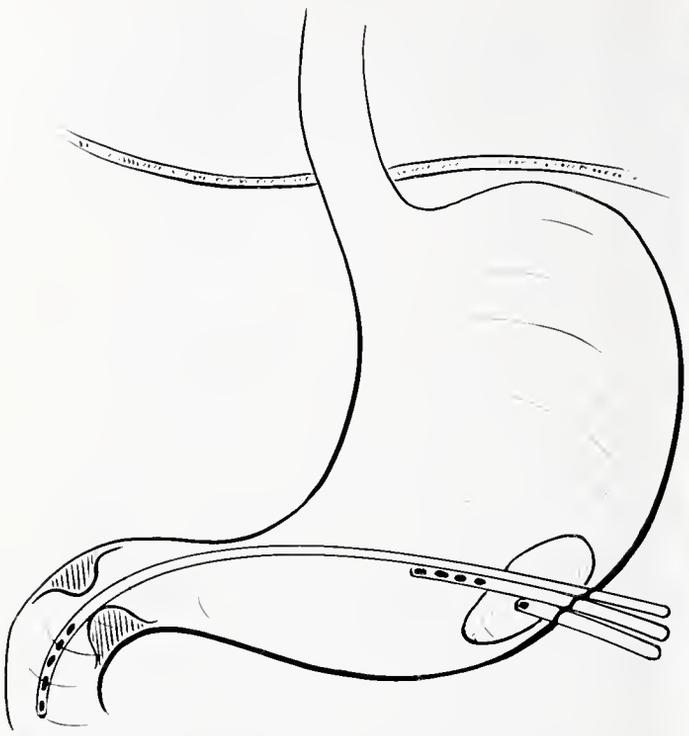


Figure 5
The Hurwitz triple lumen gastrostomy tube.



Figure 6
Repeat esophagram, no leak is seen—the arrow indicates the previous location of the leak.

tinuous aspiration of the stomach (further removing any stress on the region of the repair) and allowed feeding via the duodenal tube. A tube feeding mixture containing 2,400 calories per day was given. Fluid accumulated in the right chest on the 22nd postoperative day and approximately 2000 cc. were removed via posterolateral chest tube. The fluid failed to produce growth on culture. The patient continued to do well and a repeat barium swallow the 33rd postoperative day revealed no leak (Figure 6).

The patient began a full liquid diet without difficulty and then a soft diet. The right chest tube drainage was converted to open drainage on the 37th postoperative day due to a residual 200 cc. cavity which closed without difficulty.

Pathophysiology

Curiosity has been aroused by the almost universal left lower location of the spontaneous rupture, and the occurrence in apparently normal esophagii.

McKenzie, in 1880, dilated excised esophagii with water until they burst. Sixteen of the 18 studied burst low on the left side approximately 2 inches above the cardia.[9] Kinsella, Morse, and Hertzog performed a similar experiment with air on 65 cadaver esophagii. They found that 62 of the 65 burst low on the left side at an average pressure of 193 mm. Hg.[10] Similar findings were reported by Mackler in 1952 following air rupture of cadaver esophagii at an average of 5 pounds per square inch.[11] Kinsella, et al., also noted that a strong man could exhale with a force of 180-190 mm. Hg. so a spontaneous rupture of a "normal" esophagus can certainly occur within physiological pressure limits.

The predilection for rupture in the left lower esophagus has also stimulated interest. Anatomically, the esophagus changes from the stronger cross striated fibers in its upper one-third to weaker, all smooth fibers in its lower third. Also, there is a "splaying out" of the fibers in the lower esophagus as they develop the cardia and gastric fundus.[11] The experimental observations of esophageal rupture describe an initial longitudinal separation of the muscle fibers, ballooning out of the mucosa between these fibers and finally rupture of the mucosa.

Most cases of spontaneous rupture occur in association with vomiting, although a few cases without vomiting have been noted.[12] Summarizing the above data, it is easily conceivable that forceful regurgitation against a closed cricopharyngeous could result in rupture without requiring greater pressure than are normally physiologically possible. The rupture could also be expected to occur most often in the lower left

location. Further, this is primarily a catastrophe limited to men (90% of the reported cases are in males) so one can speculate that the stronger individual is required to generate the regurgitant pressures necessary for rupture.[13]

Other predisposing factors must be considered as the rupture of an epiphrenic diverticulum[14] and the contribution of acid-peptic disease as demonstrated by Brackney, et al. They produced spontaneous esophageal perforation in dogs following ligation of the pylorus and injections of histamine in beeswax, thus indicting the combination of peptic esophagitis and regurgitation.[15]

Diagnosis

First, and most importantly, one must be aware of this diagnostic possibility. Once considered, the diagnosis may be quite simple when the usual clinical and X-ray findings are present. Mackler has suggested that the triad of vomiting, low thoracic pain, and subcutaneous emphysema is pathognomonic of the condition.[11] Confusion with perforated peptic ulcer has occurred due to the epigastric or low thoracic location of the pain. Indeed, 10% of the reported cases have been operated upon with a presumptive diagnosis of perforated peptic ulcer.[7]

The chest X-ray in conjunction with low thoracic pain and vomiting usually confirms the diagnosis. Mediastinal air is present and cervical air had appeared in 60% of the cases so studied.[7] Some have found a peculiar "V" pattern of the lower mediastinal air helpful. This is well illustrated in an article by Naclerio in 1957.[16] Left hydrothorax is commonly present with or without air and fluid may also be present in the right hemithorax. Endoscopy and/or barium swallow with contrast material would provide further confirmation, but this should only infrequently be necessary and probably not often worth the delay in undertaking definitive treatment.

Treatment

Surgery is the only effective therapy. Nonoperative management has resulted in 100% mortality for all cases so treated.[13] These patients are commonly desperately ill when seen by the surgeon and immediate operative intervention should be undertaken as the shock-like state is due to mediastinal and pleural contamination, pain, and anoxia.[17] Expediency in making the diagnosis and getting the patient to surgery is rewarded with a much improved survival. An average mortality of 80% accompanies those cases diagnosed and treated 16 hours or later following rupture. Dehydration, commonly present, is rapidly corrected with balanced electrolyte solution under central venous pressure monitoring control. Intravenous broad spectrum antibiotics should be given preoperatively and during surgery. The mediastinum is exposed via a low left posterolateral thoracotomy incision and a meticulous debridement of all foreign material is followed by irrigation with several liters of warm saline. The majority of reports favor primary closure of the laceration, even if extensive mediastinal and pleural reaction is present. Most recommend some form of buttressing as wrapping the repair with a strip of intercostal muscle with intact blood supply, wrapping with a portion of contiguous lung,[18] or use of the gastric fundus as a patch as described by Thal.[8] The latter procedure is appealing as it is easily done, adding only a few minutes to the operative time, and provides strong well vascularized tissue to promote healing. The earlier suggested therapy of simple chest tube drainage to allow formation of an esophagocutaneous fistula can no longer be considered adequate as the mortality with this procedure is currently almost twice that reported for primary closure of the rupture plus drainage (50% for the former procedure and 20% for the latter).[7]

Large bore chest tubes (#40 F.) should be placed in the region of the injury and attached to water seal drainage. If a right hydrothorax has already occurred, it should be drained with a water seal system at this time also.

Provision for jejunal feeding should be made. Some have threaded a Levine tube down through the stomach into the duodenum. Others recommend a surgical jejunostomy. The Hurwitz gastrostomy tube used in this case was especially appealing to us as continuous gastric aspiration can accompany the feedings, effectively preventing gastric reflux to the area of the injury.

The postoperative management is similar to that for any major thoracic procedure. Frequent deep breathing with humidified IPPB is mandatory along with early ambulation. Broad spectrum antibiotics should be continued for at least seven days and may be changed or extended on the basis of cultures or amount of the material from the chest tubes.

Nothing is permitted by mouth until the integrity of the repair is confirmed by barium

swallow 7-10 days postoperatively. If secure, a progressive diet starting with clear liquids is permitted. Should a leak be found (this has occurred in 60% of reported cases) an esophagocutaneous fistula will have formed along the chest tube tracts and the majority will heal spontaneously within one to two weeks if the patient is permitted nothing by mouth. The development of a thick walled empyema cavity in either hemithorax must be treated by conventional open drainage methods, preferably including resection of a segment of rib.

Summary

Successful surgical management of a case of spontaneous rupture of the esophagus is presented. The diagnosis and surgical management are discussed. The necessity for early diagnosis with immediate operative intervention is stressed.

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Insulin Patterns Prior to and After Onset of Diabetes

T. S. Danowski et al (Univ of Pittsburgh School of Medicine, Pittsburgh)

Metabolism 18:731-740 (Sept) 1969

Increases in serum insulin in response to an oral glucose load taken during the diabetic phase were definitely greater than those recorded before the diabetes appeared in two of three adults. Thus, in two patients the ratio of the increment in blood glucose to the increment in insulin recorded after glucose intolerance had appeared was lower than that documented one year earlier during the pre-diabetic phase, indicating an enhanced insulin response. The enhanced glucose-induced hyperinsulinemia in these newly discovered diabetic persons indicates that in them the diabetes stemmed from inadequacy of hypoglycemic action of the insulin either because the insulin molecule was defective, pro-insulin was present, insulin action was vitiated by plasma or tissue antagonism, or absorption of glucose was enhanced.

ELECTROCARDIOGRAM OF THE MONTH

AGE: SEX: Female BUILD: BLOOD PRESSURE:

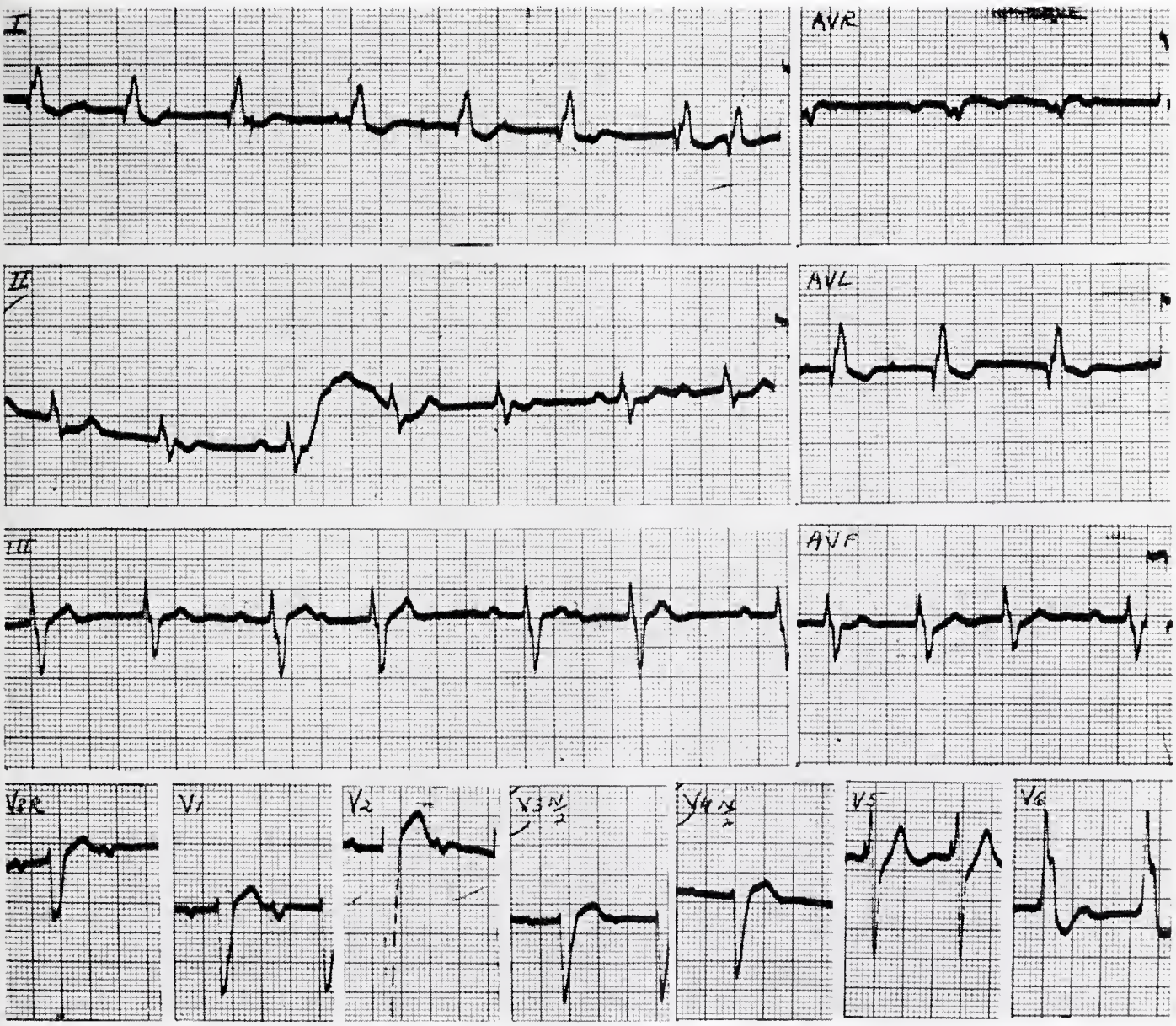
CARDIAC DIAGNOSIS:

OTHER DIAGNOSIS:

MEDICATION:

HISTORY: Female; no other information available.

See Answer on Page 334

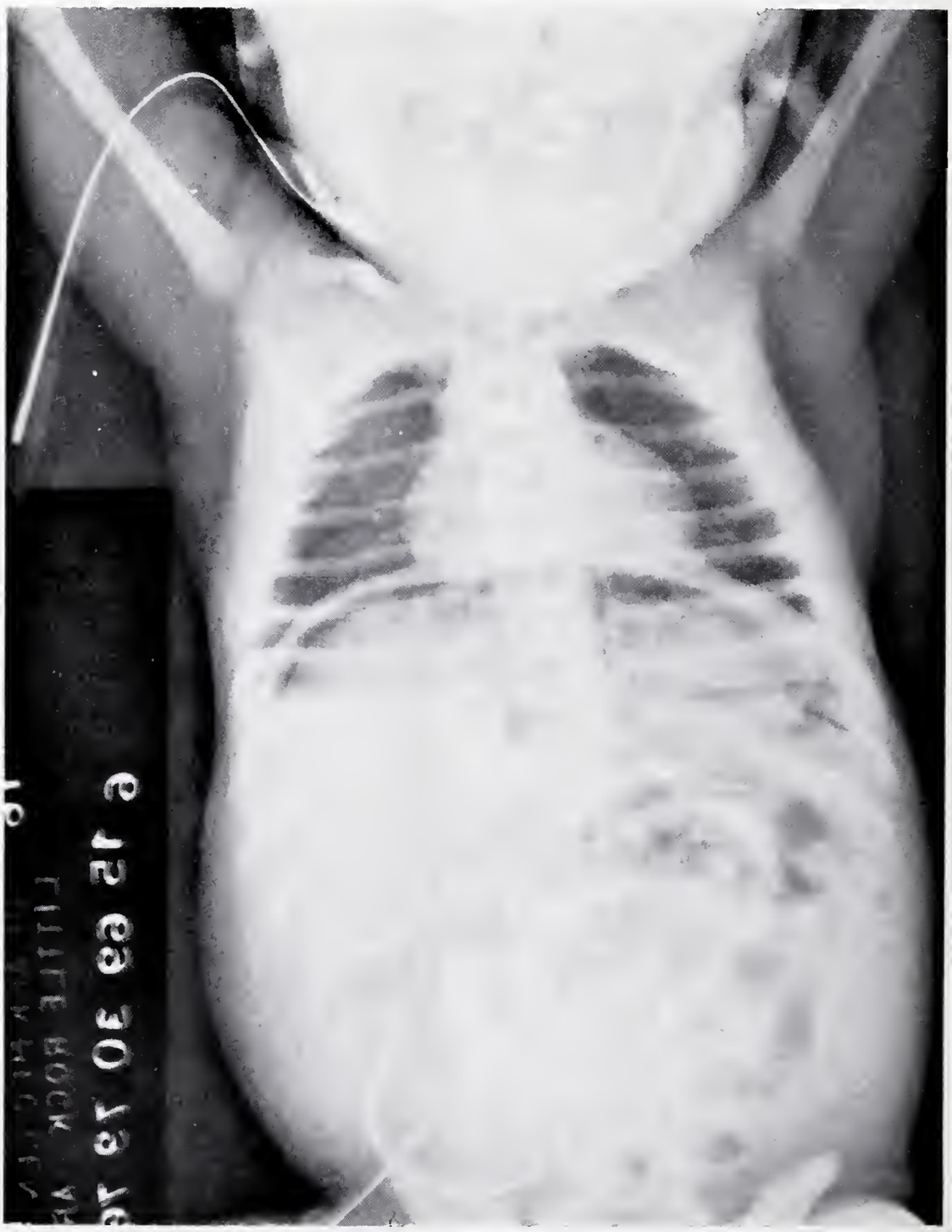


The Department of Medicine, University of Arkansas Medical Center
James S. Taylor, M.D., Professor of Medicine

RADIOLOGY CASE OF THE MONTH

Prepared by the
Department of Radiology, University of Arkansas
School of Medicine, Little Rock

See Answer on Page 334



HISTORY AND PHYSICAL EXAMINATION: This three-day-old white male infant vomited twice. The vomitus contained a small amount of blood. Soon afterwards he developed abdominal distension, labored respiration, and cyanosis.



Laboratory Improvement Program

Robert T. Howell*

The Bureau of Laboratories of the Arkansas State Department of Health has received a grant of $95,030 through the Community Health Division of the Department of Health, Education and Welfare for the implementation of a program of laboratory improvement and evaluation in the State of Arkansas. The grant was awarded on June 1, 1969, and will continue for five years, with decreasing federal and increasing state participation in its funding, until 1974 when the State will be expected to assume full financial support of the program.

There are, in Arkansas, more than 150 clinical and health-related laboratories, providing laboratory services to over 2 million people with more than fifty percent of these people living in rural or more isolated areas. With an estimated 610,000 hospital admissions in the state each year, requiring an average of 6 laboratory procedures—over 3,250,000 laboratory procedures are performed on patients admitted to hospitals alone—not counting those to private physicians' offices, outpatient clinics, and independent laboratories. The level of test performance and sophistication of these laboratories varies from poor to very good; from the routine blood and urine tests performed in doctor's offices to the complex chemistry and microbiology available in the large hospital and medical centers. The needs of the patient and physician, whatever the laboratory, require the same high level of test performance.

The Bureau of Laboratories has, for a number of years, offered proficiency testing in the area of syphilis serology through the premarital examination act. Failure to meet the necessary standards for accuracy in this test causes the laboratory to receive notice of probation, and if requested, on-site assistance and technical advice to upgrade performance of the laboratory in question. Participation of laboratories in the laboratory improvement program is wholly voluntary, although some categories of laboratories may find it necessary to participate through other regulations imposed by Medicare, etc., once the program is in full swing. It is hoped that the voluntary nature of the plan will permit more laboratories to join promptly and will allow for eventual acceptance of standards of excellence by the laboratories without the necessity of punitive action by government agencies.

Objectives of the Laboratory Improvement Program have been established to provide for the upgrading of the quality of local laboratory performance through constant evaluation and proficiency testing as can be provided by measuring the precision of reproducibility of a given method in the local laboratory, providing a measure of comparative results between laboratories and a series of reference laboratories, and the ability of the local laboratory to identify certain pathogenic microorganisms. Also to establish acceptable systems of quality control for use in all laboratories, to insure that a minimal number of necessary laboratory procedures are available in all laboratories, and to increase, in so far as possible, the competency of local laboratory personnel through training.

The Laboratory Improvement Program will be operating on four closely related levels: proficiency testing and quality control, on-site inspection and consultation, training, and program evaluation. Under the proficiency testing aspects of the program, laboratories participating in the program will be sent samples or specimens to

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analyze as they would any specimen from a patient, and report their results back to the Bureau of Laboratories. Results from these proficiency samples are analyzed statistically and the performance of each laboratory graded, and compared with the results obtained by reference laboratories. Generally, specimens will be submitted each month in the areas of microbiology, clinical chemistry, syphilis serology, and hematology with the yearly schedule covering most of the sub-specialities within these groups. Laboratories may participate in the full schedule of proficiency testing, or select those areas pertinent to the tests routinely done in their laboratory. Laboratories showing poor performance on their test samples will be so advised, and assistance in the form of consultation, quality control, or training would be offered to them. Laboratories showing a quality of performance that constitutes a hazard to patient care might be asked, for example, to not perform those tests until quality control can be improved or technical assistance given to eliminate the source of error.

The preparation and mailing of specimens and the recording and evaluation of proficiency testing sample reports will constitute a major effort at the Bureau of Laboratories. Stock culture maintenance, preparation of serum pools, and making of test specimens, whether in the form of slides, serum, blood, or other clinical specimens is time-consuming and expensive. Recording and statistical evaluation of results is also time-consuming and exacting. However, proficiency testing is only one part of the program. To upgrade the performance of laboratories making poor showing on the proficiency samples, there will be on-site visits to the laboratories to survey the personnel, equipment, and procedures used. There will be on-site consultation with the laboratory to improve their performance, with the possibility of some training in that laboratory, or invitations to receive bench training at the Bureau of Laboratories or other laboratories participating in the program.

Training courses are to be offered at the Bureau of Laboratories for periods from one day to a week. Subjects for the courses will be chosen from queries to the state laboratories, from demonstrated need as determined by the proficiency testing program, and on new topics of interest and direct applicability to laboratorians. Participation in the program by the University of Arkansas School of Medicine and the National Communicable Disease Center should help insure the quality of instruction. One course in parasitology has already been given; others in bacteriology and microbiology are being planned.

The evaluation of the effectiveness of the program, in part, will include the numbers of laboratories agreeing to participate in the program, analysis of improvements on laboratories working on proficiency test specimens, and an estimate of the laboratories adding additional procedures to their armatorium as may be desirable in their communities and for the clientele they serve.

Simultaneous Renal Allograft Nephrectomy and Allotransplantation

F. O. Belzer and S. L. Kountz (Univ of Calif School of Medicine, San Francisco)

Arch Surg 99:467-469 (Oct) 1969

Two patients who had received renal allograft and had undergone rejection have received a second graft from a cadaver source, transplanted immediately after the first graft was removed. Both patients were known to have mismatches on the first transplant, but had good matches on the second. Follow-up studies five to six months postoperatively have shown consistent excellent renal function.

Subcutaneous Emphysema of Leg Secondary to Toothpick Ingestion

R. D. Shaffer (8700 W Wisconsin Ave, Milwaukee)

Arch Surg 99:542-545 (Oct) 1969

A 51-year-old bartender may be the first reported case of small intestinal perforation by a foreign body that presented without abdominal findings but as subcutaneous emphysema of the leg. Because of partial malrotation of the bowel the double-ended toothpick perforated the ileum at a position where it was retroperitoneal. Sixteen cases of subcutaneous emphysema of the leg from gastrointestinal origin are reviewed.



EDITORIAL

"Those Unfortunate People — The Smokers"

D. S. Bachman, M.D.

The measures that smokers resort to for the right to insure their premature deaths are amazing. They will resort to almost any device to justify their continuation of their addiction. They will go to any means to divert attention away from cigarettes—whiskey, food, drugs, etc. Their strategy is simple—get after the other stuff and forget cigarettes! Please let us hooked smokers alone!

These unfortunate souls rarely realize the difference between protection and prohibition. Common sense reasoning is lost. Safeguards, set up to protect their health, are interpreted by schizophrenic rationalizing to be diabolical schemes to rob them of their imagined justified pleasures. This writer is amazed by the clamoring of so many of our (educated souls) for their right to long suffering and untimely death wrought by the tobacco industry. The plight of these socially accepted addicts is likened to the victims of "Dante's Inferno."

Little do these people know of the niceties and pleasures of not smoking—things that we ex-smokers have the privilege of enjoying.

Whether one's addiction be alcohol, dope or tobacco, he should be pitied and helped—not condemned and discarded.

The government's attempt to awaken intelligence into our hooked smokers is commendable. History bears out the fact that humanitarian efforts are damned by the doomed.

Such is the plight of our nation of addicted smokers today. They are confused, frightened and antagonistic. Their faith in a tottering multibillion giant is frightening. Their loyalty to a sinking ship is commendable!

Reasons for the failure of the anti-smoking campaign in England are obvious. The public is sick and tired of having health figures shoved down their throats in order to try to scare them into not smoking. It's about time for the medical profession to realize that many smokers are goaded into smoking more by such a program.

Unless we adopt a positive approach and show the smoker there is more in it for him not to smoke than to smoke, our campaign in the United States will fail as it did in England.

Let's spend more time talking about the nuisances of smoking (cough, expectoration, sinusitis, post nasal drip, headaches, dry mouth, burning eyes, dyspnea, clothing burns, stale ashes, tobacco crumbs, yellow teeth, poor taste, and loss of smell, tobacco breath, and smoke filled rooms). Let's tell them of the pleasures of quitting (absence of the above plus saved money, time and life). The freedom of regimentation of no smoking signs is once again enjoyed by the ex-smoker.

Let's talk of the unfeminine aspects of smoking—tobacco halitosis, smokey odored hair, stained teeth, increasing baldness, premature aging and frigidity. Not to mention increased sterility, premature babies and more miscarriages. What a pity it is to see a woman spend so much time in trying to look and act feminine then spoil it so completely by a 3½ inch weed dangling from her mouth! Little does she know that she smells like a stale cigarette butt.

Let's pity the smokers that can't quit. It's about time for them to realize that they are hooked. They are more thoroughly addicted than alcoholics and dope addicts. The socially unaccepted addiction of alcoholics should be envied by socially accepted cigarette addicts! The gutters of alcoholism (lost family, lost job, lost place in society) are effective deterrents to help the alcoholics stay dry. The gutters of cigarette smoking are not realized until it is too

late and often there is no return from them. These gutters are lung cancer, heart disease and emphysema, etc.

Let's tell the smoker, who doesn't care about himself, to give his kid a break. We know that smoking parents are the biggest reason for smoking teen-agers. There is nothing adult about smoking. Many adult smokers are chronologically and intellectually mature but are still wearing emotional diapers.

Smoking and weight is an overplayed gimmick. What excuse does a fat smoker have? There are more fat smokers than thin nonsmokers in the U. S. today. How about that!

We physicians are the rightful leaders to encourage our patients to enjoy the pleasantries of not smoking that we enlightened ex-smokers have the privilege of experiencing.

Our professional image has been tarnished in recent years. Can one think of a better way to re-establish our place of rightful prestige in the eyes of the public than to adopt a positive and sincere approach to help our patients avoid the tragedies and filth of cigarette smoking? The public is looking to us for help. Let's not let them down!

There is a new status symbol today—the nonsmoker. Are you in that charmed circle, Doctor?

Gastric Peristalsis as Stimulus of Acid Secretion in Man

C. A. Linares, A. Lemberg (Güemes 4070, Buenos Aires) and L. R. Dragstedt

Arch Surg 99:459-461 (Oct) 1969

Peristalic activity per se might be an adequate stimulus for the release of gastrin from the antrum which in itself stimulates acid secretion. The effect of metoclopramide on basal gastric secretion in man was studied in normal controls and in patients with duodenal and gastric ulcers, both before and after surgical treatment. It was only in patients with duodenal ulcers treated by vagotomy and pyloroplasty that the drug produced a significant increase in gastric secretion. This increase evidences antrum origin because the administration of metoclopramide to duodenal ulcer patients treated by vagotomy and antrum resection did not induce any increase in acid secretion.

Spontaneous Arteriovenous Fistula Between Aneurysm of Abdominal Aorta and Left Renal Vein

J. J. Yashar, G. L. Hallman, and D. A. Cooley (1200 Moursund Ave, Houston)

Arch Surg 99:545-548 (Oct) 1969

Rupture of an abdominal aortic aneurysm into the left renal vein was successfully treated surgically without the use of blood transfusion. The left renal vein is an unusual site for rupture of an abdominal aneurysm, which is more likely to occur when the left renal vein passes behind the aorta as it did in this patient. The resultant large, proximal arteriovenous fistula may cause high output cardiac failure. Early operation is indicated even in patients who cannot take blood transfusion. Careful conservation of blood plus the use of low porosity dacron grafts favor a successful outcome.

MEDICINE IN THE NEWS

THE MONTH IN WASHINGTON

Washington—A Senate subcommittee said that the number of medical malpractice suits probably will increase and "the situation threatens to become a national crisis."

Sen. Abraham Ribicoff (D., La.), chairman of the Subcommittee on Executive Reorganization which has been reviewing the federal role in the nation's health care problems for nearly two years, reported eight conclusions after an extensive staff study. They are:

"1. The number of malpractice suits and claims is rising sharply in certain regions of the country. The size of judgments and settlements is increasing rapidly.

"2. Most malpractice suits are the direct result of injuries suffered by patients during medical treatment or surgery. The majority have proved justifiable. These suits are the indirect result of a deterioration of the traditional physician-patient relationship.

"3. The publicity given to higher malpractice judgments and settlements, based frequently on new legal precedents, is likely to trigger increasing litigation in other states. The situation threatens to become a national crisis.

"4. Already, higher judgments and settlements are having the following direct results: (a) Companies providing malpractice insurance are increasing the cost of coverage. (b) These costs—in the form of higher charges—are being passed on to patients, their health care insurance companies, and federal health care programs.

"5. The rising number of malpractice suits is forcing physicians to practice what they call defensive medicine, viewing each patient as a potential malpractice claimant. Physicians often order excessive diagnostic procedures for patients, thereby increasing the cost of care. Moreover, they are declining to perform other procedures, which in themselves, may entail some risk of patient injury.

"6. At present, it appears that no one affected by the rise in malpractice suits and claims has been able to deal with this problem in a manner that promises to alleviate this situation.

"7. The lion's share of the total cost to the insurance companies of malpractice suits and claims goes to the legal community.

"8. There is a definite federal role in the malpractice problem."

Specialists listed as having "a greater potential exposure to malpractice suits" were orthopedic surgeons, general surgeons, neurosurgeons, anesthesiologists, obstetricians and gynecologists.

The 1150-page report included responses from staff inquiries to the American Medical Association, the American Hospital Association, lawyers and malpractice insurance companies.

If the situation continues to worsen, the report said, the federal government "may have to consider—a reinsurance pool to which it would contribute."

If the federal government moves into the malpractice area, the report said, it also should consider:

"... whether medical or surgical injury to a patient is a community responsibility and therefore compensable by the community.

"... whether it must provide legal aid to the poor to help them seek redress from personal medical or surgical injury.

"... whether it will insist upon creation of more effective regulatory devices over health professionals and health facilities to assure that those who are providing care are competent to do so."

* * *

A special task force recommended that the federal government experiment in different ways of paying physicians under Medicare and Medicaid.

In the first of a series of reports on Medicaid, the task force—appointed by Health, Education and Welfare Secretary Robert H. Finch last July—said:

"HEW should actively program experiments for incentive reimbursement under Medicare and Medicaid, with new emphasis on experiments in payment methods for physicians as the

key generators of health services. In addition to experiments in institutional reimbursement, other experiments could emphasize compensation to groups of practitioners using modified approaches to capitation with built-in controls on quality and costs."

The report said that states also should be made aware of options now available under present laws and regulations in addition to the individual fee-for-service basis for payments to physicians. The report listed "contract payments with quality controls, case average methods, and fee for time."

The task force recommended that Medicaid funds be used to finance group practice, neighborhood health clinics and home health care programs, particularly in ghettos and other low-income areas.

The recommendation was the core of a goal "to effect changes and improvements in the health care delivery system" of the nation.

"Bringing about needed major changes in the organization and delivery of health services is a long-range objective, requiring national commitment and establishment of national policy and priorities," the task force said in the first of a series of reports.

"For the short-range, we are recommending certain actions which could bring about some improvements and which are consistent with long-range objectives."

For the short-range, it was recommended that five per cent of federal Medicaid funds be earmarked for state "development and improvement of health care services and resources." Consideration also should be given to such use of Medicare funds, the report said.

The federal government was urged to take a more positive leadership role in the Medicare program by first improving its own administrative machinery and then getting the states to make their management functions more efficient.

Other recommendations of the task force included:

—Deny federal Medicaid funds to chiropractors and naturopaths.

—Require uniform provisions and unified state standard-setting, certification, and consultation functions with respect to providers of service under both Medicaid and Medicare.

—Establish eligibility for Medicaid benefits by permitting an applicant to fill out a simple declaration form.

—Require "profiles at the state level of vendors and recipients of service, and criteria against which to screen claims to identify patterns which appear to deviate from desirable and/or usual behavior."

* * *

The American Medical Association urged Congress to give top priority to appropriations that will help increase the number of physicians.

Testifying before a Senate appropriations subcommittee, Dr. C. H. William Ruhe, director of the AMA's Division of Medical Education, said that "medical education should be supported financially as fully as possible to meet the pressing need which exists today for an increased number of physicians."

"We believe," he said, "that in any appropriation priorities established for all government programs, those which affect health care should be given primary consideration. Further, because of the special need . . . for more physicians, we urge that appropriations relevant to the production of physicians be given first priority."

Concerning decreases in the Administration budget in support of research and training grants, fellowships, library grants and research facility construction, the AMA spokesman said:

"It is difficult to estimate the effect these reductions will have upon efforts to increase physician production, but there is concern among many medical educators that the growth in medical school enrollments will be inhibited. We believe that this effect should be watched closely and corrective measures instituted promptly if physician production is impaired."

The AMA joined the Student American Medical Association and the Association of American Medical Colleges in a joint statement which said that "an increase in the appropriation for the Health Professions Student Loan Program is crucial."

THINGS TO COME

The 12th Annual Meeting of the South Central Association of Blood Banks will be held in Houston on March 12-14, 1970, at the Rice

Hotel. Any member of the medical professions, administrative or technical personnel, and others interested in blood banking are invited to register.

On Thursday morning, March 12, an Administrative Workshop will be presented, chaired by E. Richard Halden, Jr., M. D., Medical Director, Carter Blood Center, Fort Worth, Texas.

On Thursday afternoon, March 12, the SCABB Committee on Technical Workshop will present a seminar which will feature a panel of distinguished experts. Case histories will be presented by the seminar moderator. A seminar manual will be provided.

Among some of the outstanding speakers who will participate in the program are: William Pollock, Ph.D., of Ortho Research Foundation, Raritan, New Jersey; Carlos Ehrich, M.D., of the New York Blood Center; and Peter Issett of Spectra Biologicals, New York City.



PERSONAL AND NEWS ITEMS

Dr. Robert Hill

Dr. Robert L. Hill of Hot Springs is the new vice-chief of staff at St. Joseph's Hospital of that city. He will serve in that capacity for the year 1970.

Dr. New Relocates

Dr. Kenneth O. New, formerly of Dermott, has joined the medical staff of the Millard-Henry Clinic of Russellville as a general practitioner.

Arkansas Native Receives National Honor

Harry M. Meyer, Jr., formerly of Conway, and a 1953 graduate of the University of Arkansas School of Medicine, has been awarded by *Parents Magazine* its medal for outstanding service to children. Dr. Meyer was one of two doctors who developed a vaccine to fight German measles which was first tested at the Arkansas Children's Colony.

Doctors Long and Norton Appointed to AMA Councils

Dr. Joseph N. Norton of Little Rock and Dr. C. C. Long of Ozark were recently announced by AMA Executive Vice President, Dr. Ernest B. Howard, on behalf of that organization's board of trustees, as having received appointments to the Council on Medicine and Religion and Council on Rural Health, respectively.

Dr. Saltzman to Be Recognized

In recognition for his ten years of service on the AMA Council on Rural Health, a plaque will be presented to Dr. Ben N. Saltzman of Mountain Home at the banquet session of the 23rd National Conference on Rural Health. The ceremonies will take place on April 9, 1970, in Milwaukee, Wisconsin.

Legislative Council Refuses Request by Osteopaths

The Arkansas Legislative Council refused in December to act on a request that state osteopaths be given the same privileges in Arkansas as those enjoyed by medical doctors. Dr. Joe Verser, secretary of the State Medical Board, delivered the main testimony by the Arkansas Medical Society at a hearing before the Legislative Council.

Dr. Van Pelt Honored

More than three hundred people gathered recently in Eureka Springs to attend an open house for Dr. Ross Van Pelt who is closing his practice after twenty-five years of service to that community. He was presented a plaque honoring him as the town's "Outstanding Citizen 1969."

Doctors Jansen and Stuckey Elected to Offices in the Southern Medical Association

Dr. G. Thomas Jansen of Little Rock has been elected chairman of the Dermatology Section,

and Dr. James G. Stuckey, also of Little Rock, elected vice-chairman of the Plastic and Reconstructive Surgery Section of the Southern Medical Association which embraces sixteen states and the District of Columbia.

Dr. James Balch Heads Hospital Staff

Dr. James I. Balch will serve as president of the medical staff of DeQueen General Hospital for 1970, as well as holding the title of chief of staff. Other staff members include Dr. Frank Daniel, Dr. R. C. Dickinson, Dr. Rodger Dickinson, Dr. Jim Citty, Dr. Wayne Pullen, Dr. Charles N. Jones, Dr. C. F. Shukers, and Dr. Eugene Joseph.

Best Wishes to Dr. J. B. Futrell for a Speedy Recovery

Friends of Dr. J. B. Futrell from all over the state wish him a speedy convalescence and return to practice after his hip surgery. After thirty-nine years of practice of the healing arts in Rector, his patients and friends hope his own condition is well on the way to recovery.

Dr. Applegate Recognized in National Medical Press

Regular readers of American Medical Association's *PR Doctor* have noted with pride that fellow Arkansas physician, C. Stanley Applegate, Jr., of Springdale, was featured in that publication's "stemwinder" column, November-December, 1969, issue. After reading the column, his selection for that honor is easily understood, and the Society, too, takes pride that one of our members has received such notice.

ANSWER—Electrocardiogram of the Month

A: 108
RATE: V: App. 80 RHYTHM: Sinus
PR: Variable, prolanged QRS: .12 sec. QT: .32 sec.

SIGNIFICANT ABNORMALITIES:

Variable incamplete A-V black c drapped beats (Wenckebach periads). Pralanged QRS c delay an the left. Sagging RS-T depressians.

INTERPRETATION: Abnarmal

Variable incomplete A-V block c dropped beats. Left bundle branch black.



Doctor's Wife Nominated for Honor

Wanda Lucille Northcutt, wife of Dr. Carl Northcutt, has been nominated by the Stuttgart Hospital Auxiliary for the title of Stuttgart's "Citizen of the Year" for her work in various areas of community activities.

ANSWER—Radiology Case of the Month

DIAGNOSIS:

Gastric perforatian.

DISCUSSION:

Perforatian of the stamach is relatively uncommon in infants. It usually occurs during the first week of life. The symptoms are not characteristic. Vomiting is usually the first symptom. The vomitus and stool may contain blaod. Abdominal distension occurring suddenly in an infant should suggest the possibility of a perforation at some site in the gastrointestinal tract. Cyanasis may appear if the distension is sufficient to interfere with respiration. Manifestations of shock may appear rapidly.

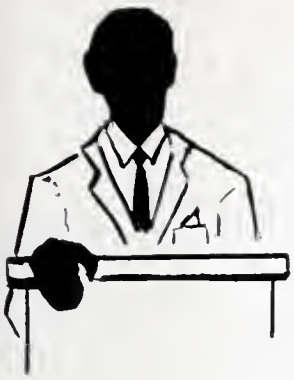
A roentgenagram of the abdomen in an upright positian shows the typical findings of pneumoperitoneum. The mast common cause of pneumaperitaneum in this age group is congenital weakness af the stomach wall, usually the upper anterior aspect of the greater curvature, with all the coats involved.

Radiologically, the diagnosis is suggested by the presence of penumaperitoneum. Since this finding in itself indicates a surgical emergency, cantrast examinations are not indicated. It is sufficient ta recall that the three mast common causes for acute perforatian of the viscus in the newborn are:

1) Acute ulceration, usually duodenal.
2) Congenital pyloric or small intestinal atresia with gastric dilatatian.
3) Congenital weakness of its walls, or congenital muscle defects alone.

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PROCEEDINGS OF SOCIETIES

Doctors Crane and Nixon to Lead Jefferson County During 1970

Doctors H. A. Crane and W. R. Nixon of Pine Bluff have been elected to head the county's two major medical organizations for 1970. Dr. Crane was elected president of the Jefferson County Medical Society, and Dr. Nixon was elected chief of staff at Jefferson Hospital. Dr. A. G. Sullenberger of Pine Bluff was elected vice-president of the Society and Dr. H. J. Morris of Pine Bluff was named vice-chief of staff.

Baxter County Elects Officers

Dr. Carl Arnold of Salem was elected president of the Baxter County Medical Society for 1970. Also elected was Dr. John Sneed, vice-president; Dr. Ben N. Saltzman, re-elected secretary-treasurer; Dr. Robert Kerr, delegate; and Dr. John Guenthner, alternate delegate. All are of Mountain Home.

Pulaski County Names Officers for 1970

Officers elected by the Pulaski County Medical Society for 1970 include: Dr. James L. Smith, Little Rock, president-elect; Dr. Charles R. Henry, Little Rock, president; Dr. G. Thomas Jansen, Little Rock, vice-president; Dr. James Weber, Jacksonville, secretary; and Dr. Frank T. Padberg, Little Rock, treasurer-elect.

Boone County Elects Officers

Boone County recently elected its medical society officers and also officers for that county hospital's medical staff.

Officers for the Boone County Medical Society are: Dr. David Martin, president; Dr. Ulys Jackson, vice-president; Dr. William Breit, secretary; and Dr. Rhys Williams, delegate, all of Harrison.

Dr. Paul L. Mahoney, Jr., was elected chief of staff; Dr. Tom Bell, vice-chief of staff. Both are of Harrison.

Seminar on Emergency Health Care

The Craighead-Poinsett County Medical Society sponsored a three-day seminar on emergency health care, January 12-14, at the Carl Reng Center on the Arkansas State campus. Dr. Charles E. Kemp of Jonesboro is president of the Society. The meeting was especially designed as a training experience for ambulance drivers, policemen and firemen.

Ouachita County Installs 1970 Officers

Dr. Charles Fohn of Camden was elected president of the Ouachita County Medical Society recently. Other officers named were: Dr. James Hawley, vice-president; Dr. Lowell V. Ozment, secretary-treasurer; Dr. James Guthrie, delegate; and Dr. John Miller, alternate delegate, all of Camden.



OBITUARY

Ernest Alexander Purdum

Dr. Ernest Alexander Purdum of Hot Springs died December 19, 1969, at the age of 83 as the result of injuries received in an automobile accident. He was born May 13, 1886, at Appomattox, Virginia, and was, at the time of his death, the oldest practicing physician in Hot Springs.

Dr. Purdum attended the University of Virginia Medical School, graduated in 1910, and moved to Hot Springs in 1912. He was a member of the staff of both Ouachita Memorial and St. Joseph Hospitals. He also was a member of the Garland County and Arkansas Medical Societies and the American Medical Association.

Survivors include two daughters, a brother, and four grandchildren.

* * *

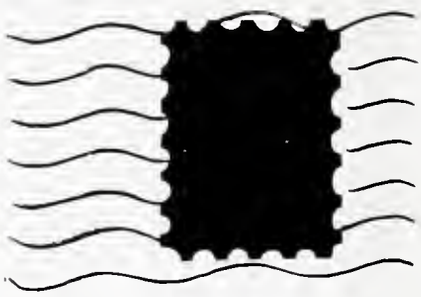
M. C. Crandall

Dr. M. C. Crandall, aged 82, of Wilmot, died January 11, 1970. He had practiced medicine in Ashley County since 1912.

A graduate of Hendrix College and the University of Tennessee Medical School, Dr. Crandall was a member of the Ashley County and Arkansas Medical Societies and the American Medical Association. He recently was honored by the

Arkansas Medical Society as one of the oldest active physicians in the state.

Survivors include a daughter, two sisters, two grandchildren, and four great-grandchildren.



LETTERS TO THE EDITOR

November 10, 1969

Dr. Alfred Kahn, Jr.
Editor, Arkansas State Medical Journal
6th and Pulaski Streets
Little Rock, Arkansas 72203

Dear Alfred:

A milestone has been passed in Arkansas medicine and I think that this school and the first candidate deserves a little publicity in the state journal.

In July, 1964, I returned from a Fellowship in Immunology at Pittsburgh to head up a training program in Allergy and Immunology at the University of Arkansas Medical Center. It was not until April, 1966, after about a year and a half of correspondence and gathering of material for the Sub-Specialty Board of Pediatric Allergy and the Residency Review Committee of the American Medical Association, that I got the Fellowship Program at this medical school approved for 2 years of training leading to certification. We are ahead of Oklahoma, Mississippi and Louisiana in this respect. We are approved to take 2 Fellows in Pediatric Allergy, although so far, we have had only one at a time. The biggest problem is to find money available in this state to pay for the Post-Doctoral Fellowship Stipends which currently need to be about $7,000.00/year to compete with other schools. If you know any benevolent souls that might like to endow two Pediatric Allergy Fellowships or even one, do let me know!

The first trainee, Dr. Kelsy Caplinger, passed his Sub-Specialty Boards in Pediatric Allergy in October, 1969, in Chicago, and is therefore certified, after a 2 year training program at this school. He graduated from the University of Arkansas School of Medicine in 1963, and in fact, he had all of his Pediatric Residency and Pediatric Allergy training in this state. As you know he is now associated with the Arkansas Allergy Clinic here in Little Rock. Incidentally, I've had loads of help and a great deal of moral support in working out the details of this program from Dr. Alan Cazort, especially, but also all of his colleagues, Dr. Purcell Smith, Dr. Bill Hefley and Dr. Fred Kittler. I doubt if any director of any program ever had finer cooperation from doctors in practice in the teaching program.

I thought you would like to have this information.

With kindest personal regards, I am

Sincerely yours,
/s/ Vida
Vida H. Gordon, M.D.
Director, Pediatric Allergy Training Program, and
Associate Professor, Departments of Pediatrics and Microbiology



Onychodystrophies Secondary to Liquid Nitrogen Cryotherapy

C. M. Caravati, Jr., B. T. Wood, and D. R. Richardson (3801 Patterson Ave, Richmond, Va)
Arch Derm 11:440-442 (Oct) 1969

Onychodystrophies resulted from liquid nitrogen therapy for verrucae vulgaris in two patients. These changes should be added to the list of complications secondary to treatment with liquid nitrogen.

Thallium Poisoning

B. J. Bendl (Univ of British Columbia, Vancouver)
Arch Derm 11:443-446 (Oct) 1969

A case of thallium poisoning is reported. The patient exhibited alopecia and neurological signs, and responded to treatment with dithizone. The literature pertinent to the use of dithizone and diethyldithiocarbamate in the treatment of thallium poisoning is reviewed.

March, 1970

THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 66 No. 10

FORT SMITH, ARKANSAS

94th ANNUAL SESSION
ARKANSAS MEDICAL SOCIETY
ARLINGTON HOTEL, HOT SPRINGS, APRIL 26 - 29, 1970

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THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

PUBLISHED MONTHLY UNDER DIRECTION OF COUNCIL

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Retrolental Fibroplasia (RLF) Diagnosis and Prevention

Jimmie John Magie, B.S., M.D., and F. Hampton Roy, B.S., M.D.*

Let us suppose that you as a GP, Pediatrician, or Ophthalmologist are responsible for the care of a premature infant at this moment. He has intermittent periods of respiratory distress. To relieve his cyanosis you must administer O_2 in excess of our normal environment. What should you do to prevent this infant from developing iatrogenic blindness? Do you understand the etiology, physiology, pathology, and sequelae of RLF? The purpose of this report is to outline a rational guide for you to follow to prevent RLF.

Retrolental fibroplasia is primarily a disease of premature infants occurring in the first three months of postnatal life.[1] It occurs most commonly in premature infants who have a severe form of the Respiratory Distress Syndrome that requires administration of oxygen in concentrations in excess of our normal environment. This includes conditions of the premature that require supplemental oxygen such as hyaline membrane disease, heart anomalies, atelectasis, pneumothorax, aspiration, pulmonary hemorrhage or edema. Approximately 40,000 infants in the United States each year demonstrate Respiratory Distress Syndrome. Its mortality is high. The clinical manifestations of Respiratory Distress Syndrome[2] begin immediately or a few hours after birth. The infant becomes cyanotic, tachypneic, and develops a highly characteristic expiratory grunt. Some infants may demonstrate cerebral depression and become flaccid while others may have cerebral irritation despite the cerebral depression. With the reduction of oxygen usage, it is felt that the death rate of premature infants rose in the decade 1955-1965.[3] Also more frequently noted were such neurological sequelae such as cerebral palsy. With these factors in mind oxygen in higher concentrations has begun to be used to treat Respiratory Distress Syndrome again. With this pendulum is expected an increase in retrolental fibroplasia.

Retrolental fibroplasia was first described in 1942.[1] In the early fifties, excessive oxygen in the premature's environment was identified as the causative agent.[4] At that time, it was the leading cause of child blindness in the United States. Retrolental fibroplasia is a preventable disease; however, it is not a treatable disease once it becomes established. *The retinotoxic effects occur when the respiratory distress subsides.* This may occur at any time the infant loses his cyanosis. The high ambient oxygen concentration in the incubator, if not lowered at the time the respiratory distress disappears, results in an extremely high arterial PO_2 which causes retinal vessel narrowing. This relative anoxia affects the incompletely vascularized and immature retina. Monitoring of arterial PO_2 requires expensive laboratory equipment and trained personnel. Hospitals with such facilities are few in this state. Normal full term infants achieve an arterial PO_2 of 60-80 mm Hg when breathing room air (20.94% oxygen).[5] Arterial PO_2 values higher than 100 mm Hg may become retinotoxic to the premature infant.

Initially the elevated arterial PO_2 produces a vasoconstrictive effect upon the peripheral retinal vessels and those in the choroid which lasts 12 hours. When viewed at this time, the vessels will be noted to be markedly narrow, and the retinal surface has a pale appearance peripherally. If the infant is removed from the high oxygen concentration at this time, the vessels will return to their normal caliber and appearance.[3] *If they fail to do so, it is presumptive evidence that retrolental fibroplasia has begun to develop.* Following this vasospasm, is a vaso-

*From the Division of Ophthalmology and Research, University of Arkansas Medical Center and Little Rock Veterans Administration Hospital, Little Rock, Arkansas 72206.

Reprint requests to Little Rock Veterans Administration Hospital, 300 East Roosevelt Road, Little Rock, Arkansas 72206 (Dr. F. H. Roy). Supported in part by NIH #2T01 NB 10041-02.

dilatation phase which lasts four to six hours. Then a vaso-obliterative phase ensues. The vaso-proliferative stage begins with invasion of the retina and vitreous humor with newly formed capillaries. Hemorrhages of these delicate capillaries produces a reactive gliosis. A pre-retinal membrane forms from the hemorrhages and exudates. With retraction this membrane leads to a retinal detachment. In mild cases a partial retinal detachment may occur. In severe cases complete retinal detachment and organization of the vitreous with fibrotic tissue may occur.[6] This may produce an opaque white mass posterior to the lens (leukocoria). Transient elevation of the intraocular pressure may occur and may lead to a shrunken eye. In general, the disease is bilateral, has a higher incidence of myopia, and begins initially on the temporal side of the retina.

What can you as a practicing physician do to prevent retrolental fibroplasia? With little expense any physician can acquire the necessary items to evaluate premature infants under oxygen:

1. *Lid speculum.* It is almost impossible to examine the retina of a premature without adequate separation of the lids—a Sauer infant eye speculum works well.* It costs approximately $8.00 and can be used without any topical anesthetic. Sterilization is adequate with either ethylene oxide gas or steam under pressure.
2. *Mydriatic drugs.* These drugs are used to dilate the pupil. Mydriacil, 0.5%, and Neosynephrine, 2½%, may be used with safety. One drop per eye of each drug will dilate an infant's pupil fairly well within twenty minutes and lasts about four hours.
3. *Ophthalmoscope.* Ophthalmoscopic examination for the presence of severe retinal vasoconstriction is advocated as a method of monitoring premature infants that require high oxygen therapy.[5] The physician should acquaint himself to the retinal appearance of normal and premature infants. Hazy media and persistent embryonic pupillary vessels may preclude an excellent view. A bright light is helpful, such as the AO Electric Ophthalmoscope which costs $260.00. If the vasospasm phase of retrolental fibroplasia is noted, prompt action is necessary. The constricted retinal vessels will gradually return to normal caliber within 10-15 minutes after the infant is removed from the incubator. Prompt lowering of the oxygen concentration further reduces the possibility of retrolental fibroplasia. If the vasospasm persists for 15 to 20 minutes after removal from the incubator, it is presumptive evidence that retrolental fibroplasia will evolve. Again, to prevent any further retinotoxic effects the oxygen concentration should be lowered. If one observes retinal vessels that are of normal caliber, it can be assumed that retrolental fibroplasia has not developed. Daily examinations while using oxygen are advisable.

The oxygen analyzer is available to measure the oxygen concentration within the incubator. The concept of safe concentrations such as 40% oxygen must be viewed with caution. The premature infant must be evaluated individually to safely administer the proper amount and duration of oxygen therapy. Remember, it is best to treat the infant, *NOT* the incubator.

These guidelines may help you to prevent a life of blindness for some premature infant. Remember, *retrolental fibroplasia is an iatrogenic disease.* With daily fundus examinations, its incidence can be reduced. An intelligent appraisal of each infant and proper treatment can help you prevent the dreadful sequelae of retrolental fibroplasia, such as blindness.

Summary

Retrolental fibroplasia (RLF) is caused by excessive oxygen in the premature infant. With

*E-4110, Storz Instrument Company, 4570 Audubon Avenue, St. Louis, Missouri.

daily fundus examinations, constructed retinal vessels, the earliest sign of RLF, can be detected. If the retinal vessels redilate after cutting down on the oxygen, *NO* permanent damage will occur. However, if the vessels remain constricted after 20 minutes, minimal damage will occur. With daily fundus examinations, this iatrogenic disease can be reduced.

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Contact Photosensitivity Dermatitis From Sun-Protective Agent

G. C. Goldman, E. Epstein (Massachusetts General Hosp, Boston)
Arch Derm 11:447-449 (Oct) 1969

A popular commercial sun-screening agent containing the ultraviolet absorbing chemical glyceryl p-aminobenzoate was found to be a photosensitizer, having produced a severe dermatitis in a patient who applied it prior to sun exposure. Three possible mechanisms of action are briefly discussed: photoallergy, phototoxicity, and photoaugmentation. The agent was shown to be an ordinary contact allergen as well as a photosensitizer.

Congenital Aortic Vascular Ring

B. L. Tucker et al (1136 W Sixth St, Los Angeles)
Arch Surg 99:521-523 (Oct) 1969

Compression of the trachea and esophagus by vascular anomalies of the aortic arch and its branches has been surgically corrected in 34 pediatric patients. These vascular anomalies fit into four categories: double aortic arch, right aortic arch and left ductus arteriosus, aberrant left subclavian artery, and right aortic arch with aberrant left subclavian artery and left ductus arteriosus. Respiratory symptoms were present in all patients and dysphagia in four. Every patient had an esophagram showing characteristic abnormality.

Head Injuries Patho-Physiology

James Rodney Feild, M.D.*

Treatment of head injuries will be forever present on the medical scene regardless of therapeutic advances. It is difficult to categorize the many types of head-trauma and their method of occurrence. The velocity, the size, the shape of the opposing object, as well as the position of the head whether fixed or free, the location of the impact, the surface area involved, and the multiplicity of impacts are all factors determining the severity of a head injury. As a result of the injury, the head may be accelerated, decelerated, or deformed. Forces then transmitted to the intracranial contents produce compression, expansion, and rotation of the brain. These factors practically never operate separately. In understanding the mechanisms of the brain injury, one should visualize the brain as a gelatinous mass inside a rigid and irregular skull, free to move as forces require.

Deceleration Injury

In a deceleration injury, the moving skull strikes a stationary object. The skull is rapidly decelerated. The lagging brain is subsequently carried into the area of impact causing a surface compression and injury. At the point of local impact pressures are high. Opposite the point of impact, a negative pressure or suction develops because of the inertia of the brain. Destruction of brain tissue occurs opposite to the area of impact when the pressure equals vapor pressure. Should the skull rebound, these forces are reversed. Such is the mechanism of coup and contra-coup injuries. The difference in pressure between these two areas may be sufficient to shear deeper structures in the mid-brain or diencephalon.

Rotational Injury

An injury is not usually as focal and local as described and rotational forces may cause other sites of damage. Rotation of the cerebral cortex as observed through a transparent (lucite) skull is maximal in the parietal and occipital regions regardless of the area struck.[1] During rotation veins draining the parietal and occipital lobes and traveling in the subdural space between the brain parenchyma and the skull are sheared and hemorrhage results. This is the mechanism of an acute or chronic subdural hematoma. The acuteness or chronicity depends upon the magnitude of the bleeding. Rotation contributes to the hemorrhage and contusion seen at the temporal tips and on the orbital surfaces of the frontal lobes. The rough anterior fossa floor caused by the irregular orbital roofs and deep cribriform plates in addition to the sharp lesser wings of the sphenoid, are factors causing the contusions, hemorrhages, and lacerations frequently encountered on the base of the frontal lobes and at the temporal tips when the brain rotates. Since there is more circumferential than midline movement in a rotating object, the brain stem bears the brunt of the shearing forces. Pathological changes of hemorrhage, contusions, and edema are found in the high brain stem. As result of shearing forces damage to the mesencephalon and/or its connections probably contribute to unconsciousness.

Acceleration Injury

In an acceleration injury, the head is at rest and free when struck by an object. A local injury to the brain beneath the point of impact occurs because of inertia of the brain parenchyma. A contra-coup injury will occur because of negative pressure occurring opposite the point of impact as the skull moves away and the brain toward the point of impact. As the skull comes to rest, the inertia of the brain causes it to strike the skull adding insult to the previous injury. Rotational forces may again be at work.

Linear Fracture

Fracture of the skull may occur with the head fixed or free. With the head free a linear fracture is more of a possibility. As mentioned the velocity, size, shape, surface area of contact, and multiplicity of impacts all determine the type of fracture. An object striking the skull without enough force to penetrate the bone will cause local in-bending of the skull. Distantly associated is an out-bending of the skull. The time for local in-bending and distant out-bending to occur is about 1/2000 second.[2] The stress occurring in the cranial bones between the in-bending area and the out-bending area causes a linear fracture between the two sites. For instance, a blow to

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the parietal region causes a local in-bending with an out-bending to the thin temporal region. A linear fracture develops between the temporal and parietal regions. This may cross the middle meningeal artery lacerating it. Such a situation would develop into an epidural hematoma. The sphenoid ridges, petrous bones, inion, and gabella are heavy struts limiting and directing the lines of stress during fracture of the calvarium.

Depressed Fracture

Depressed fractures are caused by small objects of relatively high velocity such as occurs with bullets or hammer-heads. The depressed fractures occur more readily when the skull is fixed. Usually depressed fractures have radiating linear fractures associated with them, especially in the lower velocity missile injuries. When a high velocity missile strikes the skull there is little inbending of the skull locally and radiating linear fractures do not usually develop. The speed of a high velocity missile easily overcomes the local bony resistance and far reaching stress lines do not occur. The major damage is to the brain parenchyma.

Evaluation[3]

The following is intended as a practical guide for the emergency evaluation of a patient with a head injury.

As in an illness of a non-traumatic nature the historical details of the trauma are also important. The most important point to be gained from the history of the injury is whether or not the patient was unconscious. In the instance of a vehicle accident, if the patient remembers the noise of the crash, then it may be assumed that the patient was not unconscious afterwards. After other historical facts are gained the general physical examination is as important as the neurological examination. Even though unconscious the patient should be completely examined because of the frequent associated injuries. After a general examination is completed the head is examined by palpation. The scalp is inspected for evidence of abrasions, lacerations, hematomas, etc. If a laceration is discovered, then a sterile glove can be put on and the examiner can more adequately palpate and inspect the laceration and the underlying bone. If a fracture is discovered a diagnosis of a compound linear or depressed fracture can be made. Palpating a hematoma through the intact scalp frequently reveals a soft spot in the center of the hematoma. This may be mistaken for a depressed fracture. The hematoma is firm peripherally because the blood is dissecting the scalp away from the skull and soft centrally because of the absence of pressure within the mass. Unless the scalp is lacerated one cannot tell by palpation whether a depressed fracture is present or not. The patient's ears should be examined for evidence of hemorrhage and/or spinal fluid in the ear canal or behind the tympanic membrane. Such a discovery would establish a diagnosis of a basilar skull fracture. The patient's nose and throat should be inspected. Blood in the nasopharynx or oropharynx could flow there through the eustachian tube. This could also denote a fracture of the base of the skull into the middle ear with subsequent bleeding into the pharynx through the eustachian tube. At this time the adequacy of the airway can be determined. If the airway is not adequate, the patient should be rolled on the side and suctioned before considering a tracheotomy. Moving the tongue from its relaxed position in a supine unconscious patient will greatly improve the airway on some occasions. If this is not the case, then a tracheotomy should be performed before proceeding further. If there is an urgent need for an airway, a #13 needle may be inserted through the skin into the trachea. This gage needle will sufficiently maintain the airway until a tracheotomy can be secured and may lead one to the trachea.

The neurological examination at this point is not difficult. Perhaps the most obvious finding and one of the most important is the level of consciousness. An early sign of intracranial pressure is a depression in the level of consciousness. A patient who is completely unconscious and does not respond to verbal stimuli or contact stimuli is usually seriously ill. The disoriented patient who is restless and moving about on the examining table is less seriously ill than the more unconscious patient. The pupils are inspected and tested for their reaction to light. The optic discs are viewed. One will not usually see choked discs with acute head injuries. Rarely with massive bleeding within the skull the discs may be choked within a few hours. Occasionally subhyaloid hemorrhages may be seen in the instances of moderate or massive subarachnoid bleeding following a head injury. The central vein of the retina pulsates in about 90 to 95 per cent of the normal population. The pulse in these veins is an expression of the pulse pressure

transmitted from the arterial vascular system through the cerebral tissue and into the spinal fluid which alternately compresses the central vein of the retina as it emerges from the optic nerve several milimeters behind the globe.[4] The spinal fluid pressure is usually below 195 mm when the pulse is present.[5] Should this disappear in the subsequent observation of the patient one can conclude that the spinal fluid pressure and intracranial pressure is rising. It is important to note the presence and extent of any injury about the orbit in accessing the size of the pupils. Injury to the eye directly may dilate the pupil for several hours. A fracture about the orbit may also damage the globe and dilate the pupil. Fractures in the anterior fossa may transect the optic or oculomotor nerve and dilate the pupil. The associated injury should be taken into consideration in the evaluation of the dilated pupil. The extremities are next examined for strength. This can be done in one of seevral ways. The limbs may be picked up and manipulated noting the tone and dropped across the body in the usual manner. The legs are also checked in this manner dropping them on the bed individually and evaluating the muscle tone. Another method of evaluating extremity strength which will not give immediate information is to observe the size of the extremity of the patient who has been unconscious for several days. The paralyzed extremities especially the hand will become edematous. This swelling follows the loss of muscle tone and secondary venous stasis with transudation of fluid into the extra-cellular space. Rarely a patient may become unilaterally jaundiced from the breakdown of blood in this paretic and edematous side. The significance of deep tendon reflexes is difficult to interpret in a patient with a head injury. Evidence of a unilateral change is significant usually indicating contralateral lesion. The reflexes may be either hypoactive or hyperactive. They need not necessarily be hyperactive to indicate a contralateral cerebral lesion. An acute injury to the brain may depress all reflexes for some period of time. A bilateral Babinski is a frequent finding in an acute head injury. This indicates a disturbance of the corticospinal system and may reflect a diffuse injury to the brain rather than a specific localized lesion. The finding of a unilateral Babinski is of more serious import. The response to pinprick can be another way of evaluating the motor system as well as the sensory system. One should not prick the sole of the foot of an unconscious patient in an effort to evaluate the motor or sensory response. This area of the foot is in the reflex zone of the Babinski maneuver and one may mistake the dorsi-flexion of the toes or even the withdrawal of the extremities which is a part of the Bakinski response as a voluntary movement. The leg should be pricked about the knee or above to properly evaluate the motor-sensory response to stimulation. After checking the level of consciousness, the optic discs, the pupillary reaction, the motor tone and strength, the deep tendon reflexes, pathological reflexes, and sensory response noting the associated face injuries, and general bodily injuries, one should have adequate information to formulate the extent of the intracranial injury. The patient can be further evaluated by taking x-rays of the injured areas.

Classification

X-rays may show a depressed fracture, a linear fracture, or a basilar fracture, but perhaps the most common x-ray finding is that of a normal skull x-ray following a head injury. The following is a useful classification to remember for making a differential diagnosis of head injuries:

TABLE I

I. Scalp
   1. Abrasion and contusion
   2. Subgaleal hematoma
   3. Laceration
   4. Avulsion
II. Skull
   1. Linear fracture, simple or compound
   2. Basilar fracture, simple or compound
   3. Depressed fracture, simple or compound
III. Central Nervous System
   1. Epidural hematoma
   2. Subdural hematoma
      a. Acute, supratentorial or infratentorial
      b. Chronic, supratentorial or infratentorial
   3. Concussion
      a. Cerebral edema
   4. Contusion and Laceration
      a. Subarachnoid hemorrhage
   5. Intracerebral Hemorrhage
      a. Intraventricular hemorrhage

Observation[12]

There are several problems which may arise while the patient is being observed. For one of many reasons it may not be possible to transport the patient to a neurosurgical center. One must take the responsibility of observing these patients for the development of increased intracranial pressure. The vital signs are an early indication

of an increase in intracranial pressure. They should be recorded every 30 minutes to an hour depending upon the injury. With developing intracranial pressure the first change in blood pressure is an elevation of the pulse pressure.[6] Systolic pressure ranging from 130-140 increase to 180-190 with a very slight increase in diastolic pressure, 5-10 mm. Hg. The pulse begins to slow. Should the pulse get below 60, the patient should be watched carefully for other signs. A pulse below 50 without associated heart disease is almost always indicative of a serious increase in intracranial pressure. Because of the possible presence of blood in the spinal fluid and the associated injury to the hypothalamus the temperature may rise to 103°. The respiratory rate becomes irregular without developing any more specific characteristics.[6] The pupils change rather late in developing intracranial pressure. These should be observed simultaneously with the vital signs every 30 minutes to an hour. A dilated pupil does not always indicate intracranial pressure as previously discussed. If the patient's level of consciousness has not deteriorated and the vital signs have not changed, other causes of dilated pupil should be considered. As pressure develops within or upon the cerebral hemisphere, the medial aspect of the temporal lobe is displaced toward the midline and into the posterior fossa through the incisure.[7] The origin of the third nerve is in the posterior fossa and it passes between the posterior cerebral and superior cerebellar arteries into the middle fossa superior to the cavernous sinus. It enters this sinus in its midportion and then passes through the superior orbital fissure to supply the appropriate extraoccular muscles and the circular muscles of the iris.[4] The nerve in transition through the incisure touches the eduge of the dura. It is here that it is pressed into the dural edge by the advancing temporal lobe. Compression of the nerve paralyzes the parasympathetic fibers on its periphery. Sympathetic fibers entering the skull with the carotid artery passing to the dilator muscle of the iris then dilates the pupil. The injury to the nerve and the dilated pupil are not of consequence. However, pressure upon or within the hemisphere sufficient enough to dilate the pupil is enough to obstruct the venous return from the rostral aspect of the brain stem. This venous obstruction is the significant pathological process underlying the clinical sign of a dilated pupil. Venous obstruction develops within 20-30 minutes after the pupil dilates. The venous drainage from the mid-portion of the pons is cephalad into the mesencephalon passing through the vein of Rosenthal and the internal cerebral into the vein of Galen. Anoxia produced by venous stasis causes dispedisis and hemorrhage into the surrounding reticular formation of the brain stem and disruption of the cardiorespiratory center. If the opposite pupil begins to dilate the process becomes irreversible in the brain stem, and the patient is beyond functional recovery unless relieved of the intracranial pressure within 15-20 minutes. Hemorrhage into the upper brain stem (Duret's hemorrhage) as just described is the mechanism of death in all patients who die of intracranial pressure alone regardless of the cause.[8] (There are other theories such as disruption of the arteries due to displacement of the brain stem caudally and/or changes in intravascular pressure to explain Duret's hemorrhage.)

The level of consciousness is perhaps the most delicate indicator of intracranial pressure. As the intracranial pressure rises the level of consciousness deteriorates. The level of consciousness begins to deteriorate before the pupil dilates. This may not be apparent in a patient already unconscious. Changes in vital signs are helpful. Cerebral arteriograms in deeply unconscious patients are helpful.

Occasionally with the development of intracranial pressure there is a hemiparesis. Consequently a patient's extremity movement and strength should be checked along with the observation of other signs. The paralysis, if it occurs, may be flaccid because of the acuteness of the injury.

Therefore, neurologic checks consist of periodic evaluation of the vital signs, pupillary response to light, extremity movement and strength, and level of consciousness every 30 minutes or 1 hour or as often as indicated.

Effects

Epidural Hematoma

An epidural hematoma is a blood clot occurring between the skull and dura. Approximately 85% are arterial and 15% venous in origin.[9] About 70 to 90% are associated with linear fractures in the temporal area. Epidural hematoma formation is usually present with depressed fracture, but is of venous origin and not of sufficient magnitude to compress the brain. A depressed fracture also usually permits intra-

cranial contents access to the extracranial spaces. Any pressure building up can be relieved through this opening and no pressure effects are present in depressed fractures of sufficient magnitude to completely penetrate and disrupt the skull. Venous epidurals can occur with long linear fractures and lacerations of the dural sinuses.

However, a typical epidural occurs following an injury over the hemisphere. The initial injury may be sufficient to fracture the skull and produce unconsciousness for a short while. The fracture is usually temporal in location and across the middle meningeal artery which it ruptures. The middle meningeal artery travels for a while on the dura, and then enters a canal in the temporal bone, later coming back to the dura. A fracture and a few mm of displacement can lacerate this artery. The patient regains consciousness from the initial injury (linear fracture & concussion), thus the lucid interval. Bleeding occurs from the lacerated middle meningeal artery during the lucid interval. Extra-dural pressure builds up and unconsciousness later occurs. The initial injury may be of sufficient force to cause unconsciousness for a prolonged period of time. No lucid interval occurs. Recognition of an epidural is difficult under these circumstances and this actor along with the associated brain injury accounts for the high mortality of 50%.[9] Symptoms of progressive deterioration in the level of consciousness, an ipsilateral dilated pupil, and a contralateral hemiparesis are typical of epidural hematomas. Epidural hematomas are almost always unilateral, but may be bilateral, and are on a side of the dilated pupil. Relief of intracranial pressure is usually brought about by a temporal craniectomy with evacuation of the hematoma.

Subdural Hematoma

Acute

An acute subdural hematoma is a rapid accumulation of blood in the subdural space. It is not common. It is frequently associated with diffuse cerebral injury. A linear fracture may or may not be present. Rotational forces after the impact are causative. Bleeding is venous in origin and of major proportions. The cortical veins in the subdural space entering the sagittal sinus rupture following the injury with resultant rapid accumulation of blood in the area. The clinical signs are those of a rapid increase in intracranial pressure. Treatment is evacuation of the hematoma. Results vary with the rapidity and effectiveness of removal and associated cerebral damage. Cerebral edema resulting from the associated concussion and/or contusion becomes a lethal factor even after the hematoma is removed and the bleeding stopped. Death occurs by infarction of and hemorrhage into the brain stem as discussed. The mortality approaches 70%.[10]

Chronic

A chronic subdural is not immediately symptomatic after the injury. Cortical veins in the subdural space entering the sagittal sinus rupture at the time of the injury. Bleeding is slow and stops spontaneously perhaps by tamponading itself. The hematoma in the subdural space organizes and liquifies. A membrane which is thicker on the dural side is formed. Because of osmosis of the spinal fluid and because of capillary formation with serous transudation and organization along the dural margins, the hematoma takes on fluid and increases in size. Usually three to six weeks or longer are required for symptoms to develop. The brain adjusts to the slow development of intracranial pressure. In cases of cerebral atrophy the cortical veins entering the sagittal sinus are suspended in the subarachnoid and subdural space. They are more likely to be ruptured not having tissue support. This accounts for the frequency of subdural hematomas in senility and alcoholics whose brains are atrophic. The atrophic brain is not imposed upon by the hematoma for several weeks and this fact accounts for the delayed development of symptoms. These circumstances are in contradistinction to the acute subdural where bleeding is more serious and the brain is normal in size and weight and cannot tolerate the developing hematoma more than a few hours. The treatment of both is removal. Chronic subdurals have had time to liquify and usually can be removed by burr hole drainage. Acute and subacute subdurals are semi-liquid and will not drain. They should be removed in toto by a craniotomy.

It is noted in Table I, an epidural hematoma or a subdural (acute or chronic) may be above the tentorium over the hemispheres or below the tentorium in the posterior fossa over the cerebellum and brain stem. Recognition of bleeding in the posterior fossa of either type is difficult. For this reason the mortality and morbidity are high. Symptoms tend to develop more rapidly because of the lack of space and the infrequency

of atrophy of the structures. Bleeding is either arterial or venous in origin on either side of the dura. The treatment is surgical removal once a diagnosis is made. A high index of suspicion is necessary particularly when the usual operative procedures did not disclose a hematoma over the hemispheres. An occipital skull fracture is frequently present and aid in making the diagnosis. The outlook is very poor.

Concussion

A cerebral concussion may be defined as an immediate transient distrubance of consciousness in response to cerebral injury with no other recognizable cerebral signs. The neuronal circuits responsible for maintaining consciousness are transiently disturbed. These are located in the brain stem, posterior thalamus and medial temporal lobes.[11] Grossly the brain displays no abnormalities. On microscopic exam, there is death of many of the cells in the above described areas.[2] Injury to the head causes a positive pressure on the side of impact and a negative pressure opposite, as discussed. As a result of the difference in pressure between these two points forces are directed toward the foramen magnum. The spinal canal cannot contain the pressure nor relieve it and it is transmitted to the tissues of the brain stem. This clinical result is transient unconsciousness and the pathological result is neuronal death of some of the cells of the reticular formation of the brain stem. After consciousness is established there are no recognizable neurologic deficits. Periodic neurological observation for a possible developing space occupying lesion is necessary since the clinician cannot predict the outcome by hitosry or physical exam immediately following the injury. Cerebral edema is not a problem.

Contusion

A contusion is a bruise. In the brain it is characterized by initial vasodilation, diapedesis, transudation, edema, focal hemorrhage, destruction, and later an inflammatory response with subsequent gliosis and scarring as the injury heals. There are many causative mechanisms of contusion of the brain. Rotational forces moving the brain over the rough anterior fossa and into the sharp sphenoid ridge accounts for the frequency of contusion, laceration, and hemorrhage at the base of the frontal lobes and at the temporal tips. Veins traveling the distance between the frontal bone and the brain and the sphenoid ridge and the temporal tips are avulsed.

A depressed fracture caused by a blunt object or a high velocity missile (bullet) can cause a contusion or laceration of the brain. The brain may be contused by in-bending of the skull when it is struck by a blunt object as a linear fracture develops. Usually this is a surface or hemisphere contusion.

Pressure gradients and shearing forces as discussed above are the probable cause of deep parenchymal contusions and petechial hemorrhages. In these areas there is a focal increase in extra-vascular osmotic pressure. This results in local swelling. The increase in volume compresses adjacent structures including blood vessels thereby causing hypoxia and vasodilatation which can lead to increased tissue osmotic pressure again and thus a progressive spreading of generalized edema with focal hemorrhage may develop.[13] This is a theory which accounts for the progressive edema seen in contusions of the brain in which there is no large focal space occupying lesion such as a hematoma.

Intracerebral Hemorrhage

Rotation of the brain with shearing forces and difference in pressures are responsible for deep intracerebral hemorrhages of significant size. These isolated hematomas are not common with head injuries. The hematoma forms rapidly in the brain which cannot adjust to its size and signs of acute intracranial pressure develop. Should the hematoma rupture into a ventricle or block in intracerebral spinal fluid pathway, it will surely be fatal.

Late Complications

1. *Seizures.* The incident of seizures following head injuries has been variably reported from 2.5 to 40%.[14,16] Seizures are not a common immediate complication of head injuries. They usually occur 6 to 18 months after the onset. With penetrating wounds of the head, later seizures have been reported in as much as 50%. The grand mal seizures are usually the most common type of seizures following a head injury, but focal seizures may be seen in penetrating wounds of the head, particularly over the motor strip. Petit mal seizures never occur.

2. *Infections* may occur as a result of "closed" injuries, penetrating injuries, depressed fractures, and linear fractures into the base of the skull involving a paranasal sinus or the middle ear. Infections are more common with penetrating injuries.[15] There may be a scalp cellulitis and/or osteomyelitis of the skull. An epidural abscess

may be associated with osteomyelitis of the skull. Subdural abscesses are rare as a complication of head injuries. Infection may complicate a subdural hematoma but also may be an isolated occurrence after a penetrating wound or after a closed head injury. Meningitis following a penetrating wound is not as common in the age of antibiotics as in the past. Infection may complicate a basilar fracture into a paranasal sinus or into the mastoid. Recurrent meningitis following a "closed" head injury always raises the suspicion of an undiagnosed spinal fluid leak. Brain abscess is not common following a penetrating head injury especially after care has been taken to remove all debris, bone fragments, metal, et cetera, in the brain after a penetrating injury.

3. Statistically, *spinal fluid leaks*[17] are not common following head injury. They occur as a result of fracture in the anterior or middle fossa into the sphenoid or ethmoidal sinuses or through the cribriform plate with leakage into the nose. This results in a rhinorrhea. Fracture into the petrous ridge or into the middle or external ear can result in an otorrhea which is much less common than a rhinorrhea. Usually the spinal fluid leak stops spontaneously. Should it not cease in 2 to 3 weeks, surgical closure of the dural defect is necessary. At times the communication between the dura and the sinus is of sufficient size and properly located to permit air to enter the skull. Such a condition is called a pneumatocele (pneumocele). It is treated as other spinal fluid leaks are treated: that is, with prophylactic antibiotics, time, and surgical closure where indicated.

4. *Leptomeningeal cyst.* Occasionally with linear fractures that are slightly displaced, especially in children, there is a tear in the dura. The arachnoid extrudes through the dura and gets wedged in the fracture line. The pulsation of the spinal fluid is helpful in creating a ball valve cyst which eventually erodes the skull margins destroying the bone and creating a large and unusual cranial defect. Treatment consists of closures of the dura followed by cranioplasty using either bone or plastics.

5. *Traumatic arteriovenus fistula.* Fracture of the middle fossa and into the sphenoid bone may lacerate the carotid artery as it travels in the cavernous sinus. Bleeding subsequently occurs into the cavernous sinus establishing an arteriovenous fistula. Symptoms include an intracranial bruit which is audible to the patient, an unilateral or bilateral exophthalamus with visual impairment and/or diplopia, and headache. Treatment is difficult because of many small arterial anastomoses between the two intracranial carotid arteries and between the external and internal carotid arteries of the same side. Present treatment consists of intracranial clipping of the internal carotid before its bifurcation into the anterior and middle cerebral artery and clipping of the ophthalamic artery intracranially at its origin. The risk of infarction of the retina and blindness must be assumed at this point. At the same stage, the internal carotid in the neck is divided and muscle or gelfoam is placed into the artery. It in guided into the carotid siphon to occlude the small arterial anastomoses mentioned. The external carotid artery is ligated and divided at this point also.[18] Thene have been successful attempts with the aid of extra-corporeal circulation at primary closure of the fistula. Results are generally satisfactory.

6. *Focal cerebral damage.* — Depending upon the area involved, the type of injury, the age of the patient, complications, and many other factors, there may be focal findings or neurological examination following a head injury. Most commonly these involve the speech and motor system principally because they are most readily recognized by clinical examination. Cranial nerve injuries vary with type of trauma. The olfactory nerve is probably the most commonly affected by "closed head injury" because it is avulsed as the brain recoils with the injury. In missile wounds, the 5th and 7th nerves are most frequently involved. There are many unexplainable symptoms occurring following head injuries such as dizziness, headaches, nausea, vomiting, blurred vision, memory deficits, nervousness, and others contributing to the post-traumatic syndrome. Symptoms seem to parallel litigation proceedings and vary directly with the pre-traumatic personality. Symptomatic treatment is difficult and time usually relieves the complaint. Post-traumatic Parkinsonism has been reported but is rare. Injuries to the hypothalamus with survival are rare. Diabetes insipidus is rarely an acute manifestation or late complication of head injury. Traumatic occlusion of the arterial supply or venous drainage of the pituitary or of the hypothalamo-portal system or hemorrhage into the pituitary producing Simmonds' disease is rare. Narcolepsy as a result of head injury has

been noticed but the anatomic basis and pathopsysiology is not understood.

Summary

Head injuries will probably increase with an increase in mechanized travel and as recreation facilities and free time become available. Knowledge of head injuries and their treatment will at one time or the other probably cross all medical fields of special interest.

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Uremia, Deafness, and Paralysis Due to Irrigating Antibiotic Solutions

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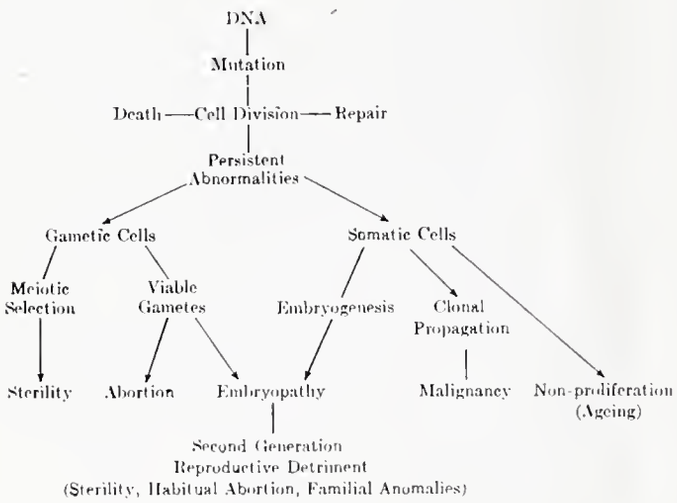
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Prophylactic and therapeutic irrigation of body tissues with antibiotic-containing solutions is in widespread practice. The peritoneal cavity, pleural cavity, and orthopedic wounds are the most frequent sites of antibiotic instillation. A recent study has indicated that no benefit is obtained from antibiotic irrigation of orthopedic wounds. The toxic manifestations in two patients whose orthopedic wounds were irrigated with a solution containing polymyxin B sulfate, neomycin sulfate, and bacitracin, and one patient whose wound was irrigated with a solution containing only neomycin are presented. All three patients had reversible acute renal failure and all became clinically deaf. In addition, one patient had toxic effects to the nerves and muscles as manifested by postoperative muscular weakness and apnea. Hemodialysis was used in these patients in the treatment of the toxic effects from these particular agents.

Chromosomal Effects of LSD-25, a Controversy?

George J. Lucas, M.D., and Wolfgang Lehrnbecher, M.D.*

A considerable quantity of literature has been accumulated on the specific effect of Lysergic Acid Diethylamide (LSD-25) and other drugs on chromosomes with consequent teratogenic damage as well as other effects (See Graph 1). While earlier reports (1967) almost uniformly claimed the presence of LSD-induced chromosome aberrations (1, 2, 3) later articles became more skeptical in postulating if LSD is capable of producing chromosome abnormalities (4, 5, 6). The present investigation tries to elucidate some of the characteristics of the problem by employing methods along the lines of the previous authors.



Graph 1

This graph visualizes biological consequences of any type of cellular damage such as produced by LSD (see ref. 2, 11, 12, 13).

Methods

Lymphocytes from the patients were cultivated under identical conditions using a modification of the method described by Moorhead and coworkers (1960). The cultures were incubated for 72 hours. Colcemid was added for 4 hours. After the harvest of cultures, they were prepared in the described way (7).

Results

Twenty control individuals were tested matching race, sex, and age. On each of these, twenty metaphase spreads were examined and the majority showed only one chromatid break evident from all spreads obtained. Most actually failed to show any deviation from normal whatsoever.

A group of 20 patients with LSD was tested. 5 individuals did not show any chromatid breaks, while 14 patients showed 1-3 chromatin breaks in some cells. One case showed a slight increase of aberrations of a type as shown in Figure 1.

Discussion

The divergent data of cytogenetic studies on eventual LSD-induced chromosome changes have been initially stated. The results of the present investigation appear to be negative in respect to the incidence of breakage in LSD patients and thus confirms the findings of recent reports (4, 5, 6) which state that LSD causes no increased incidence of chromosome anomalies as compared to normal random samples (of about 3.5%). A suppression of mitosis, as previously reported, was also recognized in the present cases. The degree of damage, chromatid breaks, or less frequently, gaps, was not obviously correlated with the number of times LSD was ingested, dosage, or elapsed time between the use of LSD and the blood samplings.

A very similar phenomenon was observed in our laboratory in studies on migraine patients treated with therapeutic dosages of 1-methyl lysergic acid, an agent structurally very much related to LSD (8).

The mechanism of drug action of LSD is assumed to interfere with serotonin in a way that lysergic acid acts either to imitate serotonin or block receptor sites for this agent in nerve terminals. This causes slowing down of the serotonin metabolism and ultimately a chain of longlasting effects (9).

Very little information is presently available on the chemical interchange between LSD and DNA; i.e., the basis of the mechanism causing chromosome breakage. Recent data indicate a direct interaction of LSD by intercalating with the DNA helix causing conformational changes, but not likely enough to decrease the internal stability to the point which results in breakage. An additional dissociation of histones from the chromosomal DNA is questionable (10).

Presently, the consequences of chromosome

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anomalies of any kind can hardly be assessed for the individual patient, yet the potential significance for the increase for translocations in offsprings is known (11).

The other genetic events caused by breakages are deficiencies, duplications, inversions and sometimes even aberrant meiosis has been reported (12). The consequences of structural anomalies, due to altered gene sequence, are supposed to depend on the individual chromosomes involved and the loci of breaks. It is theoretically assumed that they might influence the occurrence of nondisjunction and hence increase aneuploid offsprings (11, 12). This assumption found evidence in recently reported cases of different kinds of birth defects in association with chromosomal aberrations in newborn offspring of LSD users (11). The potential chromosome damage to the gametes by LSD and other agents has been suggested and shown in various experiments in animals (13). Consequences are depicted in Graph 1.

The fact that minor structural anomalies might remain undetected due to the limitations of methodology, might add to the inconsistency of LSD results. Similar exogenous-induced chromosome anomalies have been reported as being caused by aspirin, caffein and other agents in less publicized reports (14).

Additional radioautographic studies at this laboratory failed to show any significant change of a normal labeling pattern of replication in these cultures different from the control cultures. The radioautographic methodology is limited to reflecting extreme alterations of DNA structures (15) consequently this failure might indicate the relatively minor damage initially caused by LSD, a fact already mentioned in discussing the break-incidence, and interaction of LSD with DNA.

Conclusion

The present cytogenetic findings seem to support the results of some recent articles reporting no significant increase of chromosome breakages caused by LSD. These results indicate a minor initial effect of this agent on DNA, an indication that seems to be confirmed by the present radioautographic findings and mode of LSD interaction with DNA. Initially minor effects on chromosomes by agents considered to be mutagenic are as harmful, since they cause genetic damage in future generations, as shown in several cases (11).

The contradictory results of LSD studies seems to indicate the present limits of cytogenetic methodology. For this reason, it appears appropriate to shift the emphasis more to the field of biochemical pharmacology, possibly combined with biophysical and neurophysiological methods.

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DEPARTMENT OF
PEDIATRICS
UNIVERSITY OF ARKANSAS
SCHOOL OF MEDICINE

National Poison Prevention Week, March 15-21, 1970: A Suitable Focus

Jerry G. Jones, M.D.*

Accidental poisoning represents the most common medical emergency in children.[1] National Poison Prevention Week was established by Congress to emphasize the need for increased attention to this major health problem. During this week, programs designed to make parents aware of ways to prevent poisoning are conducted.

Unfortunately, the continued high incidence of poisoning accidents in children indicates that such educational programs have not been highly successful. Education and the encouragement of safe storage practices probably prevent some poisonings. However, studies[1,2] have not confirmed a relationship of poison ingestion to parents' knowledge of toxicity or to their storage habits. Informational efforts remain worthwhile, but perhaps of more practical and immediate importance is the establishment of protective barriers between the small child and the large number of potential poisons commonly found in the home. One effective means of establishing this barrier is by use of *child safety caps* on containers of potentially poisonous household products and medications.

Various types of child-resistant containers have been tried since the early 1920's, particularly on bottles of children's aspirin. In 1964 a Canadian



Figure 1
Safety Prescription Vial

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pharmaceutical association held a contest to find a practical container that would protect children. Over 200 inventions were submitted. The $1000 prize went to the designer of a container (Palm-N'-Turn**) shown in Figure 1. Lugs within the plastic cap lock into notches on the vial. When the cap is pressed into the palm and turned slightly, a springy plastic disc is depressed, freeing the lugs from the notches and permitting removal of the cap.

While the container can be opened very easily by an adult, the usual twisting, prying, and chewing of a small child will rarely open it. Among 300 children ages 1 to 11 who were presented with this container, none under 4 years old were able to remove the caps even after 2 demonstrations.[3] A 16-month trial use of the Palm-N'-Turn caps at McChord Air Force Base and at Madigan General Hospital in Tacoma, Washington, reduced the incidence of child poisoning from medication by 92%.[4] This container has been endorsed by numerous hospitals and pediatric and public health organizations, including the U. S. Public Health Service, Arkansas Medical Society, Arkansas Pharmaceutical Association, the Committee on Accidents and Poisoning of the Arkansas Chapter of the American Academy of Pediatrics, and the Central Arkansas Pediatric Society. Several pharmacies in Arkansas are using this container now, and many others are evaluating its advantages for their patients. They are finding the cost to be essentially the same as for conventional containers. Several physicians are considering adding to their prescription blanks a request for dispensing prescribed medication in safety containers.

Presently, the container is only for solid materials but soon a similar one for liquids should be available. At that time safety caps will probably begin appearing on household items other than medications—items such as bleaches, drain cleaners, furniture polishes, and insecticides. Other containers using the palm-pressure principle have been devised.* Containers entirely different in principle are also being developed.

Bills[5,6] requiring safety caps on all medications and all dangerous household items have been introduced into the 91st Congress of the United States. It has been estimated that the nationwide use of safety containers could prevent 1,600,000 of the 2,000,000 childhood poisoning accidents occurring annually in this country.[4]

Hopefully, child-resistant safety caps will come into common usage for containers of medications for both children and adults. When they do, parents should continue to keep medications and potentially harmful household products from their small children, but these containers will provide a generous measure of added safety in the home.

Promotion of safety containers seems a highly appropriate activity for all who share a concern for children. It is a suitable focus of attention for Poison Prevention Week and one to continue until safety caps gain widespread use.

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SURGERY at the UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE*

*Under the direction of Gilbert Campbell, M.D., Professor of Surgery.

Non-Operative Management of Intracranial Bleeding

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Synopsis — Abstract

The non-operative management of intracranial hemorrhage justifies a respectable role along with operative measures. Aside from diagnostic and general supportive measures, controlled hypotension offers greatest promise.

The mortality associated with intracranial hemorrhage has required a strenuous review of the results in management through the past few decades. The diagnostic recognition of the cause and the natural course have in many instances led to the conclusion that operative intervention is the logical approach. The results have been rewarding. On the other hand there are still circumstances in which operation has made the course of events little changed from that anticipated in the natural course. The patient's capacity to tolerate the insult of an intracranial hemorrhage remains a dominant factor in the outcome.

Measures necessary to sustain the patient until his condition merits consideration of operative intervention are taken as part of this discussion. Recognizing the lessened likelihood of recurrent hemorrhage from an aneurysm once the patient has survived six weeks, there has been reasonable thought devoted to means of supporting him through this period. Delayed operation has provided enviable figures in the Scandinavian operative statistics,[1] and Slosberg has even suggested that non-operative management is preferable.[2, 3]

The therapeutic approach to intracranial bleeding bears some relation to the etiology. Superficial intracerebral hematoma due to hypertension will produce a space occupying pressure effect from which relief can be gained in evacuation. Deep seated lesions are more devastating and not generally amendable to operative measures. The intracerebral hematoma associated with a ruptured aneurysm often dictates earlier surgical intervention. So, also, the hemorrhage into the subdural space from blood dyscrasias and into the substance of a tumor or an arteriovenous malformation will require decompression. The acutely obtunded state without localizing signs, accompanied by blood in the cerebrospinal fluid, has come at least initially to invoke those medical measures which have proven effective in sustaining the patient in such an acute insult.

The first order of business may be one of resuscitation. Attention to the adequacy of respiration is paramount. Too often the patient is flat on his back with the four extremities shackled to the four corners of the bed, the mouth filled with secretions, and the tongue and lower jaw weighing heavily against the hypopharynx. He may have vomited, and alveolar insufficiency may already be a problem. Blood gas levels will help recognize the potential aggravation of oxygen deprivation to the already insulted cerebrum. Nasal catheter administration of oxygen may restore a normal oxygen tension in the blood. The elevated pCO2 and an acidotic state will usually require ventilatory support.

The extreme lateral position with the knees and hips flexed to keep the patient from rolling

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forward (the position used for the diagnostic lumbar puncture) will help hold open the upper airways. Alternated with the opposite extreme side position regularly this position will facilitate postural drainage of the uppermost tracheobronchial tree. For the comatose patient an oral airway will be tolerated, or a tracheostomy may be necessary if nursing attention is inadequate. The latter procedure is, however, an assured means of bacterial contamination of the pulmonary tree. Regular intermittent positive pressure breathing, preferably with air mixture and even with the simple expedient of an Ambu bag kept at the bedside, will help prevent atelectasis.

Hyperpyrexia and an elevation in the circulating white blood cell count are common reactions to an acute insult to the central nervous system. In the first day or two they are not sufficient to dictate the use of antibiotics. The administration of antibiotics should be based on sensitivity studies of recognized infections. The hyperpyrexia will commonly accentuate the deficit in function of the central nervous system and should be combated at least to the point of maintaining normothermia. There is some suggestion that hypothermia reduces normal systemic mechanisms of resistance to infections.[4] The activity of thromboplastin is probably directly temperature dependent. Except to a mild degree or as an acute measure coupled with other devices to stabilize the patient for more definitive management, major advantages of extreme or even moderate chronic hypothermia are diffcult to appreciate.

Neurogenic gastrointestinal hypermobility and hyperacidity are a source for potential hemorrhage as a complication of intracranial hemorrhage. This is particularly true in the states of obtundation associated with insults direct to the hypothalamic-midbrain axis as occurs with the ruptured aneurysms of the anterior and posterior circle of Willis. Nasogastric drainage and/or antacids along with anticholinergic drugs can provide a deterrant to this action. The drug induced tachycardia will also reduce the intravascular pulse pressure and may give some bonus reduction in the force provoking recurrent hemorrhage from an aneurysm.

Confirmatory diagnostics become important at this point. The hemorrhagic nature of the disorder can usually be made apparent by lumbar puncture. Pool has pointed out the need for judgment in the use of cerebrospinal fluid drainage in the presence of increased intracranial pressure.[5] The caution is particularly well taken in the face of signs of a lateralized mass such as a dilated pupil, associated with coma or a dense hemiplegia. The distinction of a limited fluid removal is difficult to accomplish since, in most instances, fluid will continue to leak into the soft tissue through the puncture site.

In the absence of signs of lateralized potential of uncinate herniation the drainage of cerebrospinal fluid has given symptomatic relief of head pain with concomitant reduction in systemic blood pressure. There is an occasional patient who will suffer at least temporary communicating hydrocephalus from subarachnoid hemorrhage. Intermittent drainage can permit time for lysis of the absorptive obstruction.

The angiographic confirmation of intracranial hemorrhagic lesions is now fundamental to the plan in maangement. Aneurysmal bleeding accounts for at least half of these problems. Now the recognition of multiple aneurysms approaches a quarter of this group, and "four-vessel" angiography has become advisable for the differential considerations of surgery. There are still a quarter or more of the entire group in whom the cause for blood in the cerebrospinal fluid will escape recognition. In general these patients will fare well without recurrence on a limited supportive and symptomatic management. If bleeding does recur, the investigation should be repeated and the possibility of a hemorrhagic spinal lesion, masquerading as a more cephalad bleeding with headache and meningismus, should be scrutinized.

Except for the localization of a hematoma urgent angiography runs risk of morbidity and mortality in the comatose patient. This may be obviated by delay in favor of an improved state. Technical errors in cannulation of the great vessels to the head must be calculated. The additional insult of subintimal injection or catheter occlusion of a vertebral artery may convert a reversible state of the brain to an irreversible one as a consequence of the insufficiency. Nearly every incident of mortality attributable to angiography has occurred in the patient group classified as prognostically poor. The examination may also be useless in the face of extreme increase in intracranial pressure. Angiographic visualization of the vessels within the cranial vault may not occur. Whether this is a consequence of the lesser resistance of retrograde run-

off or a state of vasospasm remains unresolved.[6]

Earlier experiences with carotid ligation in the treatment of intracranial aneurysms provide respectable statistics favoring the therapeutic benefit particularly in aneurysms of the internal carotid artery. Some aneurysms were demonstrably smaller, most were unchanged, and yet the incidence of recurrent hemorrhage was remarkably reduced. Persuming this a consequence of altered intravascular hemodynamics the question is properly raised that such an effect could be accomplished by alteration in the systemic hemodynamics. The obvious result with proximal ligation was that of a reduction in the mean intravascular pressure and a similar change in the pulse pressure. Except for the slowing of the pulse rate a comparable change can be accomplished with antihypertensive drugs. Whisnant has pointed out the disadvantage of hexamethonium because of the concomitant increase in the impulse.[7]

The intravenous infusion of trimethaphan (Arfonad) can provide urgent yet controlled reduction of the pressure. Supplanted thereafter by reserpine and guanethidine, there is greater convenience for long term therapy. The lowest tolerable level of pressure compatible with preservation of appropriate responsiveness should be sought. Initiation of this sort of therapy can be cushioned by elevating the head of the patient's bed, resorting to recumbency if too great a drug effect is encountered. Safely conducted the ultimate of this approach requires constant physician attendance until a stable state has been achieved. For hypertensive intracerebral hemorrhage the control can be relinquished to a more modest level in two weeks, and efforts can be turned then to maintenance with the resumption of activity. In the case of ruptured aneurysms, not operated, it is advisable to sustain more severe control for six weeks, avoiding all unnecessary activity. There then remains the 10 to 20 per cent mortality from recurrent hemorrhage with which the patient and the physician must come to grips.[7]

Probably the most success with non-operative management for ruptured aneurysms has been described by Slosberg using drug-induced hypotension.[2,3,8] He had originally suggested that the hypotensive method be used in the acute stage of hemorrhage. More recently he has championed the method as the sole therapy and has stated that one should be able to eliminate surgery for most and probably all cases of ruptured aneurysms anywhere in the brain. In reporting a series of thirty-eight cases treated by hypotension he noted a mortality of 21 per cent and pointed out that a considerable number of these patients would not have been accepted for surgery. The program of management required continuous observation of the patient during the acute phase, with nursing and virtually constant physician attendance. Meyer and Bauer reported on the hypotensive treatment of spontaneous intracranial hemorrhage and were unable to detect any significant difference in the groups of patients with aneurysms irrespective of the use of hypotensive drugs.[9] However in the patients suffering from hypertensive intracranial hemorrhage, that group treated with hypotensive medications fared better. In the Cooperative Study on intracranial hemorrhage 109 patients had been treated by induced hypotension alone.[4] Fifty-four per cent were considered poor surgical risks and nearly half of that group died. Of the survivors, less than half were recorded as having minimal disability. It was concluded that the study provided no substantial evidence that hypotensive therapy helps or hinders recovery from the initial bleeding episode. In the 46 patients categorized as reasonable risk patients, there was a suggestion that the incidence of rebleeding and subsequent death had been diminished.

One of the more recent and significant concepts in the realm of medical therapy for intracranial hemorrhage has been the use of epsilon-aminocaproic acid (EACA). The tendency towards recurrent hemorrhage from intracranial aneurysms rises to a maximum about the end of the first week and then gradually falls.[10] It is probable that rebleeding is due to the dissolution of the clot of the initial hemorrhage. Mullan and Dawley reasoned possible therapeutic advantage in an attempt to prolong the naturally occurring hemostatic reaction.[11] Epsilon-aminocaproic acid is a monaomine carboxylic acid which has been found clinically useful in the management of such excessive bleeding problems as occur in prostatectomy. The activation of plasmin by such enzymes as urokinase and streptokinase is apparently blocked by the acid. Pharmacologically it is considered an inhibitor of the activator which converts plasminogen to plasmin. Mullan and Dawley treated thirty-five patients with recent subarachnoid hemorrhage

using a dose of 24 grams per day. It was given orally or by intravenous infusion. Theirs were patients who were inelligible for surgery, refused surgery or awaited surgery. Thirty patients had demonstrable aneurysms. On the therapeutic program two patients rebled. For one it was fatal. For the other it was only a mild exacerbation of previous symptoms. Mullan has described experimental evidence of prolonged localization of a radioisotope labelled clot in the subarachnoid passageways when the animals were treated with epsilon-aminocaproic acid.

Scandinavian clinicians have reported on their experience in the treatment of 744 patients for various conditions using epsilon-aminocaproic acid.[12] Side effects included dizziness, nausea and diarrhea. No toxic effects of the drug were evident on electrocardiogram or in blood studies. In some instances more than 1000 grams of the acid were used. Postmorten examinations in 46 cases revealed no signs of abnormal thrombotic reaction. They concluded that the medication did not induce thrombosis in the dosages which they used. Others, however, have called attention to the dangerous potentials of thrombotic complications which may be incurred with this form of therapy.[13,14]

Studying 353 aneurysms of the anterior communicating artery, McKissock et al., were unable to detect difference between the results of surgical and conservative forms of treatment. The death rate remained approximately the same.[15] Richardson confirmed their impression in a separate report.[16] In the discussion that followed his presentation Pool questioned the 40 per cent surgical mortality and cited several references to indicate that aneurysms in the region of the anterior communicating artery could be handled operatively with favorable results and a mortality approaching 10 per cent.

Walsh subsequently reviewed 814 patients with aneurysmal subarachnoid hemorrhage with 481 as a control group.[17] The conclusions offered were that surgery gave significantly better results for aneurysms of the internal carotid artery and for those of the middle cerebral artery. He still felt there was no significant difference to favor either form of therapy in the treatment of aneurysms at the anterior communicating artery. Marini and Maspes described 192 cases with surgical treatment in 64 of them.[18] The mortality in the unoperated patients was 60 per cent and the surgical mortality was just under 20 per cent. In the category of functional results the unoperated group were disappointing with good to excellent results in only 18 per cent, whereas 75 per cent of the operated group were considered good or better results. As is so commonly the case, and as acknowledged by these authors, selection invariably influences the outcome.

At the present writing, the application of long term non-operative management for aneurysmal intracranial bleeding is best directed at those lesions occurring in the region of the anterior communicating artery and at the top end of the basilar. At the hands of experts even these will fare better with operative obliteration or encasement.

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Some Factors Regulating Duration of Incubation for Serum Hepatitis

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Anything that tends to destroy the hepatitis virus or viruses also tends to increase the length of the incubation period. The attack rate is not reduced until the incubation period is fairly well extended. The age or virulence of plasma or serum is in part reflected by the mean incubation time among its recipients. The attack rate and the incubation time observed by Redeker at 32 C for six months suggest that he achieved less effect upon the virulence of his plasma at 32 C than did Murray at 22 C. Either Redeker's plasma was initially much more virulent than Murray's special pool, or Redeker's commercial plasma was improperly stored. The Australia antigen, believed to be the virus of serum hepatitis, can be detected primarily in the sera with longer incubation periods. Sera with short incubation times can have their incubation periods greatly extended by any treatment designed to attenuate the virus.

Zinc, Copper, Magnesium, and Calcium in Dialyzed and Nondialyzed Uremic Patients

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Chronic hemodialysis is being increasingly implicated causally in the development of metabolic disturbances. Complications such as bone disease and neuropathy have been observed and the role of trace metals in their development has been questioned. In 15 hemodialyzed uremic patients plasma and erythrocyte content of zinc, copper, magnesium, and calcium was determined before and after a single dialysis and compared to values obtained in seven nondialyzed uremics. Uremic patients on severely restricted protein intake and not dialyzed had low plasma zinc, normal copper, high plasma and erythrocyte magnesium, and low plasma and erythrocyte calcium. In dialyzed uremic patients with more liberal protein intake the plasma zinc approached normal. Also, plasma and erythrocyte calcium content rose while magnesium remained high. The effect of a single dialysis on these values was not striking and the role of the diet unknown.

RADIOLOGY CASE OF THE MONTH

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School of Medicine, Little Rock

See Answer on Page 371

By Donald I. Purcell, M.D.



HISTORY AND PHYSICAL EXAMINATION: This 58-year-old Negro sought hospitalization because of dyspnea on exertion, slight cough and a twelve-pound weight loss. His tuberculin test was negative, and he had a normal bone marrow.

ELECTROCARDIOGRAM OF THE MONTH

AGE: 35 SEX: Female BUILD: Stocky BLOOD PRESSURE: 110/70

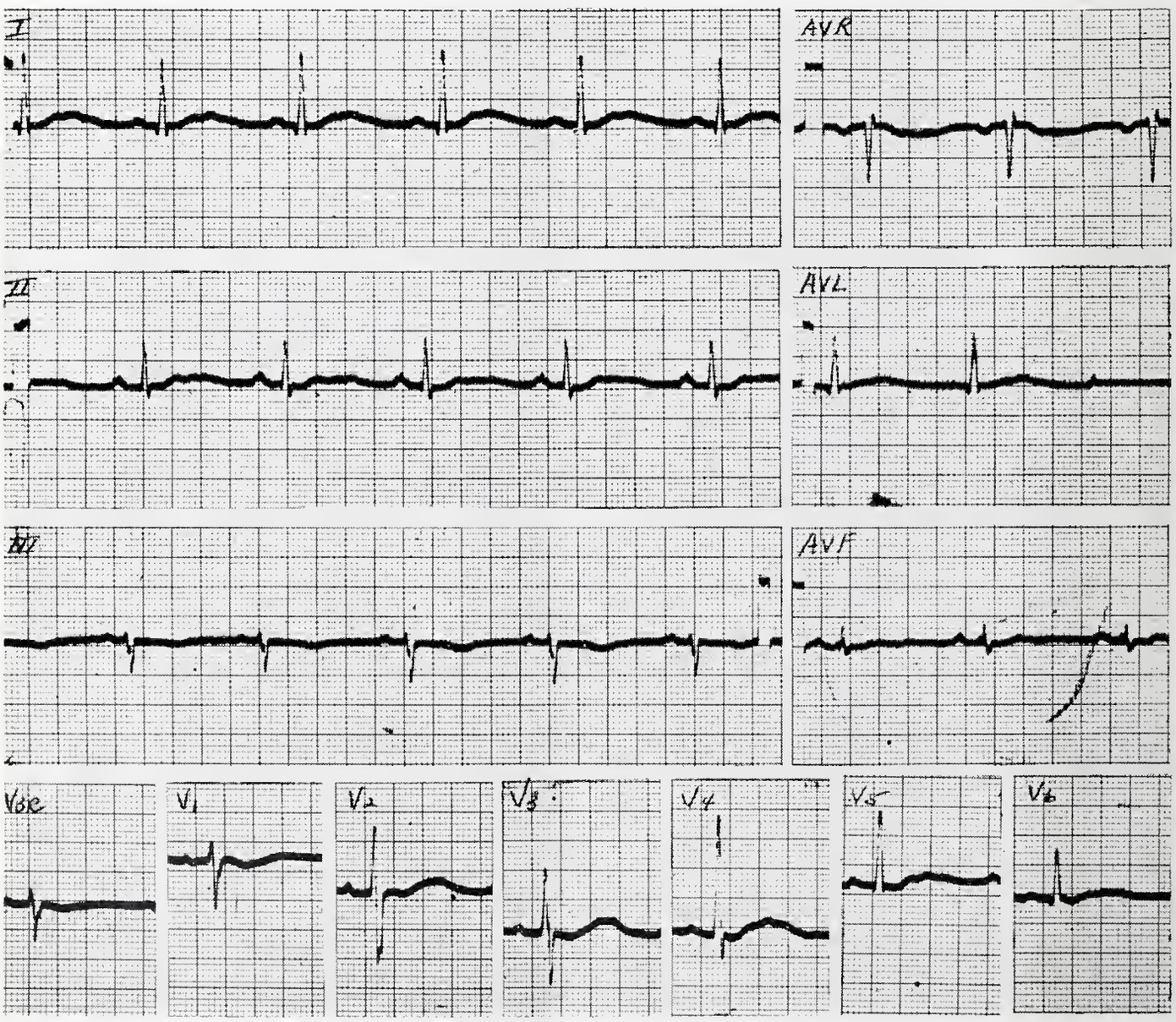
CARDIAC DIAGNOSIS: None.

OTHER DIAGNOSES: Aldosteronism.

MEDICATION: None.

HISTORY: Generalized weakness.

See Answer on Page 372



The Department of Medicine, University of Arkansas Medical Center
James S. Taylor, M.D., Professor of Medicine



PUBLIC HEALTH AT A GLANCE

Arkansas State Department of Health Division of Maternal and Child Health

The Division of Maternal and Child Health operates the Arkansas Children's Hearing and Speech Center, a Center for the evaluation and treatment of Speech and Audiology handicaps, and the Arkansas Child Development Center, a special project for evaluation of mentally retarded children. The Division provides a Maternity and Infant Care Project for the improvement of maternity and well child care at the University of Arkansas School of Medicine. The Division also provides a Project for the Care of Premature Infants in Jefferson County.

Following are reports covering the Maternal and Child Health Division's major areas of activity.

Maternity Care

A total of 5,629 maternity patients was seen. Five of the Maternity Clinics were teaching Clinics for medical students from the University of Arkansas Medical Center.

Midwife Control

A total of 160 permitted midwives delivered 1,481 babies. This was 4.4 percent of total live births in 1968.

Child Health

In 1967, 548 premature infants were serviced with seventeen (17) incubators loaned to families. Well Child medical supervision was provided to 5,241 children at Well Child Clinics in twenty-eight (28) Counties. Two (2) children with Phenylketonuria were provided Lofenalac formula.

School Health

In 1967, 1,532 school age children were seen in Well Child Conferences by the Clinician and the Public Health Nurse; in addition, 18,372 were given public health nursing services only; 246 were examined in School Health Programs by Health Department Physicians. Other school activities included 2,751 conferences between public health nurses and teachers. In the 1968-69 school year, 94,484 children were given hearing tests and 119,628 were given vision tests in the seventy-five (75) Counties.

Nutrition Services

The professional staff included one (1) Chief Nutritionist, three (3) full-time and one (1) half-time District Nutritionist. The full nutrition program was available on a regular basis to thirty-one (31) Counties. At least fifty (50) counties received services of some kind, not including diet sheets or manuals. All Counties may receive service with dietary problems (as phenylketonuria or other special problems) upon request. Physicians in private practice and hospital officials, as well as public health nurses, requested and received services.

Official and voluntary agencies in the State, and private citizens, also requested and received help with special dietary problems, or with food management problems of group feeding. Certain Divisions of the Departments of Welfare, Education and OEO received consultation on nutrition components of their Programs. Hospitals, schools (including medical and nursing) and other institutions (such as Child Care Centers) received help. An estimated 350 professional consultation services were given to Local (County) Health Departments, over twenty (20) to Day Care Centers, over 250 to grade schools and over 200 to official agency programs at the local level.

District Nutritionists work in close liaison with the three (3) Nutritionists on the Children and Youth Project and the three (3) Nutritionists on the Maternal and Infant Care Project at the Medi-

cal Center. The nutrition component of the "M & I Project" is under the technical supervision of the Chief Nutritionist of the Division. The Community Nutritionist on the Children and Youth Project works out of the Division of Maternal and Child Health and is under direct supervision of the Division's Chief Nutritionist.

Nutrition Services to the public are direct and indirect. Some examples of direct services given are clinic and home visits to patients receiving other Health Department services, or referred by physicians in private practice for consultation on modified diet; group teaching in formal and informal classes. Statistics on direct services to individuals cover the following items:

Direct services to mother	1,800
Direct services to infants and children	3,200
Services to families regarding USDA FOOD Program	400
Diet Counseling services to individuals on modified diets	1,000

Family Planning Clinics

At present sixty-four (64) Clinics are conducted in fifty-seven (57) Counties. These Clinics serviced 5,044 women in fiscal year 1969. Four (4) of these Clinics are regional and serve more than one County.

Maternity and Infant Care Project

In 1968, 1,213 patients in the nine-county area surrounding Pulaski County were served by this Project. A comprehensive Program of Preventive Health Services and Medical Care is carried on throughout this Project.

Mental Retardation Project

The Arkansas Child Development Center is a special Project of the Division of Maternal and Child Health and provides medical, psychological and social evaluations of children suspected of mental retardation. From July 1, 1968, through June 30, 1969, 463 children were evaluated.

Arkansas Children's Health and Speech Contest

During 1968-69 fiscal year, 433 evaluations were performed. Of this number, 175 were speech. In addition, there were 239 hearing re-checks and sixty-nine (69) speech re-checks. Seventy-two (72) hearing aids were fitted. Two (2) Pre-school Language Development Classes were taught. They met forty-one (41) times last year. Eighty-one (81) children have received speech therapy in half hour sessions.

Jefferson County Special Project for Early Discharge of Premature Infants

An attempt was made to determine the feasibility of early hospital discharge of premature infants to decrease the overall financial cost of these prematures to the family, and to give the family the full benefit of the family-child relationship during the early formative period of the baby's life. This Project started in 1961. Statistics on this Project are as follows:

Number of prematures in Jefferson County 1961-1968	1,070
Number of prematures admitted to Special Project	750
Premature deaths	155

This Project for the Jefferson County area shows improved infant mortality and morbidity in the eight (8) years of on-going care. Early discharge from the hospital, and specialized supervision by a comprehensive team composed of a Pediatrician, a Public Health Nurse and a Nutritionist, have demonstrated that prolonged hospital care for the premature infant is unnecessary, and care can be improved with special supervision.



Tissue Changes During Intermittent Starvation and Caloric Restriction as Treatment for Severe Obesity

M. F. Ball, J. J. Canary, and L. H. Kyle (Georgetown Univ School of Medicine, Washington, DC)

Arch Intern Med 125:62-68 (Jan) 1970

This study indicates that the fasted obese patient rapidly loses weight which is predominantly water and protein. During post-fasting caloric restriction there is rapid reaccumulation of the water and protein lost during the preceding starvation and a continued loss of body fat. Fat loss during fasting is not greater than that observed during a comparable period of caloric restriction.



EDITORIAL

Some Studies on Infection

Alfred Kahn, Jr., M.D.

"The Mechanism of Appearance of Immunoglobulin A In Nasal Secretions In Man" is an investigation by Butler, Rossen, and Waldmann into the nature of man's immunity to respiratory infections. They report that there is a quantitative relationship between Ig A and the antibodies to the challenging virus in nasal secretions; their current study was to determine the origin of Ig A. The obvious sources to investigate were plasma, Ig A, and local manufacture. They studied 20 human volunteers, of whom 6 were used for isotopic infusion studies. After injection of radio-active isotope intravenously, the plasma clearance of radio-active isotope and the appearance of radio-active substances in the nasal secretions were studied. The authors results revealed that 115 Ig A was rapidly removed from plasma and only small amounts appeared in nasal secretions. Studies on 75 Ig A disclosed also a normal dissappearance rate from the plasma and an appearance in small quantities in the nasal secretions. Butler et al feel that their studies demonstrate that immune globulins of the 115 Ig A type are locally manufactured in the nose whereas those of the 75 Ig A come in part from the plasma and the rest may be locally synthesized. It would appear that local manufacture of immune globulin probably plays a large part in the defense of the nose against respiratory infections.

"The Metabolic Effects of Intracellular Infections in Man" is the basis of a study by Beisel, Sawyer, Ryll, and Croyier (Annals of Internal Medicine, volume 67, page 744, October, 1967) from Fort Detrict, Maryland. In this work, 61 volunteers were used. Of these, 31 subjects were exposed to 3 types of organisms: P. tularensis, C. burnetii, and the virus of sandfly fever; the subjects had a two week period of study before exposure as a control, and the studies were of course continued through the period of infection. The adrenocortical function increased in all three infections, but was minimal with Q fever, while it rose to twice normal with the other infections. The increase tended to occur with the onset of fever. The nitrogen balance of the three infections were similar; with the onset of symptoms, a negative balance occurred through urinary loss. Sodium loss occurred when symptoms began and this was paralleled by chloride; later some sodium retention occurred. Potassium loss was minimal; magnesium loss was also minimal, but calcium deficit was more marked. Variations in the severity of the disease and vaccination prior to infection influenced the metabolic studies; anabolic changes might occur in the host in these instances. Nitrogen metabolism which reflects protein synthesis and destruction was negative during the symptomatic part of the infection. In reviewing their data, Beisel, et al felt that the response to these three diseases was fairly stereotyped and reflected catabolic activity during the symptomatic period of the illness, and generally the catabolism varied proportionately with the severity of the illness. The catabolism reflected decreased dietary intake and the hyperthermia and artificial hyperthermia as they point out can simulate much of the catabolism of infection; individuals who were able to eat through their illness did not have the degree of catabolic response as those who were anoretic. The amount of adrenal steroid changes occurring with infection, they felt was too small to account for the catabolic effects noted in this study.

Of current interest are several papers on infections of the myocardium. Woodward, Togo, Lee, and Hornick (Archives of Internal Medicine, vol-

ume 120, page 270, September, 1967) studied 82 patients and reported on them in an article entitled "Specific Microbial Infections of the Myocardium and Pericardium." The clinical signs were fever, chest pain, pericardial rub, Tachycardia, gallup rhythm, murmur, and cardiomegaly. The electrocardiographic changes included tachycardia, heart block, extrasystoles, fibrillation, low voltage, bundle branch block, and changes in the S-T segments and T-waves. Of their 83 cases, 23 cases were given a specific diagnosis: Coxsackie virus, poliomyelitis, mumps, influenza, histoplasmosis, ricketsial infection, staphylococcus, and streptococcus. Woodward states that 25% of bacterial infections are accompanied by myocarditis; he also cautions that when a patient with an acute infection worsens, myocarditis should be suspected—sudden death may occur.

Lastly, Burch, Sun Chu, Sohal, and Chocolough studied the hearts of 50 infants and children which were collected at routine autopsies. Twenty-nine hearts showed interstitial myocarditis of which evidences of coxsackie virus infection was found in 12. This is presented in The Journal of the American Medical Association (volume 203, page 1, January 1, 1968). The hearts were studied by immune techniques and by histologic techniques. The lesions were usually patchy. Four histologic groups were found: "interstitial myocarditis with focal necrosis of muscle fibers, interstitial myocarditis with necrosis of isolated muscle fibers, minimal interstitial tissue response with an increased cellularity with edema or vascular congestion, normal myocardium." Some cases had accompanying pericarditis. The pathology seldom indicated the ethologic agent causing the infection. These infections may explain some heretofore unexplained infant deaths. The coxsackie virus infection of the myocardium may accompany other infections. Pneumonia and meningitis may be frequently seen as clinical patterns accompanying the myocarditis. Also, in some cases, "more than one type of coxsackie virus antigen was found."

RESOLUTIONS



JAMES M. KOLB, SR., M.D.

WHEREAS, God, in his infinite wisdom, has taken from us one of our fellow physicians, Dr. James M. Kolb, Sr., whose sudden departure saddened all who knew him, and

WHEREAS, Dr. Kolb was one of our most faithful members who was often chosen for positions of leadership and trust, and

WHEREAS, Dr. Kolb served the Arkansas Medical Society as Chairman of the Council and as president, as well as representing the Society in the House of Delegates of the American Medical Association, and

WHEREAS, Dr. Kolb was instrumental in establishing the Medical Education Foundation for Arkansas, and

WHEREAS, Dr. Kolb always applied himself with diligence and devotion to the purposes for which this Society was founded,

NOW, THEREFORE, BE IT RESOLVED, that we pause here in this meeting with respect to his memory and officially adopt this resolution, and

BE IT FURTHER RESOLVED, that the Arkansas Medical Society express to his family its heartfelt sympathy at the untimely loss which it has sustained, and

BE IT FURTHER RESOLVED that a copy of this resolution be furnished to the family and to the Journal of the Arkansas Medical Society for publication.

ADOPTED: House of Delegates, Arkansas Medical Society
November 23, 1969

JAMES M. KOLB, SR., M.D.

WHEREAS, On November 16, 1969, Almighty God called from our midst our colleague, James M. Kolb, Sr., M.D., of Clarksville, Arkansas; and

WHEREAS, Doctor Kolb is remembered for his years of service as a family physician ministering to the people of Arkansas; and

WHEREAS, He served his profession unselfishly at the county, state and national levels; and

WHEREAS, He served this House of Delegates as a Delegate for fourteen years; and

WHEREAS, He served the American Medical Association as a member of the Council on Constitution and Bylaws; therefore be it

RESOLVED, That the House of Delegates of the American Medical Association express its appreciation for James Kolb's long and outstanding service to his nation and profession; and be it further

RESOLVED, That the sympathy of this House of Delegates be extended to Mrs. Kolb and family, and that this resolution be spread upon the minutes of this House and copies be presented to his wife and family.

Adopted Unanimously by the
AMA House of Delegates
November 30, 1969
Denver, Colorado

Mrs. W. R. Brooksher

WHEREAS, Death has claimed Mrs. W. R. (Peggy) Brooksher, of Fort Smith, who served as a volunteer of the Arkansas Division of the American Cancer Society since 1939, and

WHEREAS, Mrs. Brooksher was a member of the first Executive Committee of the Arkansas Division of the Women's Field Army of the American Cancer Society for the Control of Cancer, and

WHEREAS, Mrs. Brooksher, was appointed State Commander of Arkansas by the National Commander of the Women's Field Army of the American Society for the Control of Cancer, Inc., and continued as the volunteer head of the Division until her resignation in September 1958, and

WHEREAS, Mrs. Brooksher continued to serve as a member of the Board of Directors of the Arkansas Division until December, 1964, at which time, she was made an Honorary Life Member, and

WHEREAS, Mrs. Brooksher contributed her time and ability to the Cancer Control Program in Arkansas, and her efforts in the fight against cancer greatly assisted the Division in broadening and expanding its efforts in the Society's three-fold program of Research, Education and Service, therefore be it

RESOLVED: That the Board of Directors of the American Cancer Society, Arkansas Division, Inc., pay its respects to her memory and express its appreciation for her contribution to the Cancer Control Program, and be it

FURTHER RESOLVED: That these sentiments of the Board of Directors be transmitted to members of Mrs. Brooksher's family, with our deepest condolences, and that this Resolution be recorded and placed in the permanent records of the American Cancer Society, Arkansas Division, Inc.

TRAFFIC SAFETY PROGRAM

WHEREAS, The tragic loss of life upon the highways of this state has been significantly reduced in the year 1969, and

WHEREAS, This useless carnage has been, in times past, ever on the increase not only in Arkansas but throughout the Nation, and continues to rise in many other jurisdictions—the reduction of fatalities effected in this state by the Arkansas State Police is found to be all the more remarkable, and

WHEREAS, The efforts and their dramatic results have been in large part due to the vigilance and alertness of the Arkansas State Police in maintaining and executing a policy of strict, fair, and impartial enforcement of the traffic laws of this State, and

WHEREAS, The citizens of Arkansas have been directly benefited by the untiring labors of the men of the Arkansas State Police in their implementation of a greatly improved program of traffic safety,

NOW, THEREFORE, BE IT RESOLVED, that the Arkansas Medical Society applauds, commends, supports, and appreciates the traffic safety program as carried out by the Arkansas State Police in the year of 1969 under the guidance, leadership, and direction of Colonel Ralph Scott.

MEDICINE IN THE NEWS

THE MONTH IN WASHINGTON

Washington — The Internal Revenue Service postponed until next Jan. 1 one provision of a new requirement that health insurance companies report to the IRS payments of $600 or more a year to a physician.

The delayed provision covers payments other than under medicare and medicaid. Payments of $600 or more under these government programs must be reported to the IRS. A spokesman said the reporting of payments other than under the government programs was delayed for a year to allow further time for working out compliance procedures.

The IRS regulation applies only to direct payments to physicians. The Senate added an amendment to an omnibus tax bill that would have extended the requirement to indirect payments also. But House-Senate conferees took out the amendment.

Another provision unfavorable to physicians was knocked out of the tax bill, but a third was retained.

The Senate rejected a proposal that would have restricted the tax advantages gained by physicians who organize professional corporations under state laws to establish retirement plans. The Senate Finance Committee had added an amendment that would have set an annual limit of $2,500 per individual, the same as specified under the so-called Keogh law. But the Senate, by a vote of 65-25, knocked out the amendment, leaving physicians, lawyers, engineers and other members of professional corporations able to set aside as much of their income for retirement as they choose.

As finally passed by Congress, the measure includes a provision putting congressional approval on an IRS ruling that advertising revenue of medical and other non-profit, tax-exempt organizations is subject to the regular corporate income tax. Journals of state medical societies, as well as the Journal of the American Medical Association, are affected.

* * *

Medicare's Part B premium partially covering physicians' fees will go up from $4 to $5.30 a month next July 1.

Health, Education and Welfare Secretary Robert H. Finch blamed his predecessor in the post, Wilbur J. Cohen, for the size of the 32 per cent incerase in the premium which is matched by the federal government.

Finch noted that the present $4 premium rate, set in December 1968, was too low to cover costs during the current premium period and that the special Medical Insurance Trust Fund has been drawing on its reserves. He said that failure to increase the premium rate last December, in accordance with advice from Social Security Administration actuaries had made it necessary now, in effect, to promulgate two increases at once. Moreover, the depletion of the trust fund that has occurred because of the inadequate rate had made it necessary, he said, to provide for a somewhat higher margin of contingency than would otherwise be necessary.

About half the increase, 64 cents, was needed to finance the program at the level of current operations. The other 66 cents of the $1.30 increase was distributed:

— 26 cents to cover an estimated increase of about 6 percent in the level of physicians' fees;

— about 12 cents to cover an estimated increase of 2 percent in the utilization of services under the program;

— about 6 cents because the $50 deductible which a patient pays will be a smaller proportion of the total covered charges;

— the remaining 22 cents to provide a 4 percent

margin for contingencies.

* * *

President Nixon signed into law legislation setting tough federal safety standards for coal mines.

Although he had reservations about a conflict with state workmen's compensation laws, Nixon said "the health and safety provisions of this act represent an historic advance in industrial practices." He also cautioned that this law should in no way "be considered a precedent for future federal administration of workmen's compensation programs."

The Secretary of Health, Education and Welfare was given for the first time authority to set health standards for mines. Nixon said he had asked that wherever possible the disability standards under the new act be consistent with those of the Social Security disability program.

Pressure for the legislation started building up after 78 died in a Mannington, W. Va., mine disaster last November.

The AMA supported an overall Administration bill on occupational health and safety, and pledged the backing of the nation's physicians for any program "well designed to improve the safety and health of the American worker."

Dr. R. Lomax Wells, Silver Spring, Md., immediate past chairman of the AMA's Council on Occupational Health, told a Senate labor subcommittee:

". . . the American Medical Association supports the new Administration bill, S. 2788. Its provisions for standard setting, not in the Labor Department but in a new National Occupational Safety and Health Board appointed by the President, with a majority of professional experts, seems to us an acceptable equivalent to our previous suggestion of a National Council on Hazardous Physical and Chemical Agents. We endorse its concept of a separation of powers between standard setting and enforcement. We welcome, in this new bill, the intent to give a larger role to the Department of Health, Education and Welfare, whose competence in this field is recognized. Our Association approves the provision for federal support of state occupational safety and health programs to supplement inadequate manpower in the federal system. We believe that this emphasis on support of the state programs, combined with standard setting by an independent professional Board, is greatly preferrable to mandatory national standards promulgated and enforced by a single federal agency. In this regard, we welcome the stress on the use of consensus standards, and provisions for consultation with professional standard-setting agencies before establishing needed new standards."

* * *

A National Heart and Lung Institute task force predicted that the demand for heart transplants will increase beyond the present level of about 100 a year and exceed the number of the organs available for the operation.

The report of the task force on cardiac replacement also said:

— Less than 16 per cent of the 200,000 Americans under 65 who die each year from heart disease are good candidates for transplants.

— Rejection of the transplanted heart will remain "the greatest barrier to prolonged survival."

— Development of an artificial heart is now a distinct possibility.

— The federal government should emphasize research on the prevention, early detection and early treatment of heart disease.

— A new definition of death is needed.

— Total transplant charges for 36 patients averaged $18,694 per patient.

— Heart transplants have been performed on 148 patients, with 23 persons still surviving, 16 of them in the United States.

— More than 32,000 heart disease victims can be considered transplant candidates, but there are only about 22,000 possible donors a year, the report said.

* * *

The Food and Drug Administration was reorganized and given independent status under a new commissioner.

The reorganization followed several years of criticism of the Health, Education and Welfare Department agency from all sides — Congress, industry and consumers' groups. The criticism resulted in a two-month study by a task force headed by HEW Deputy Assistant Secretary for Welfare Fred Malek.

The reorganization focused on FDA's structural problems and the chief aim of HEW Secretary Robert H. Finch appeared to be to get the agency operating more efficiently. FDA was taken out of the Consumer Protection and Environmental Health Service and placed in the department's staff structure on an equal basis with the remaining Environmental Health Service and the

National Institutes of Health.

Dr. Charles C. Edwards, 46, formerly a division director on the American Medical Association headquarters staff, was named to replace Dr. Herbert L. Ley, Jr., as head of the FDA. Ley was offered another post in HEW but declined it. Two of Ley's top aides, FDA Deputy Commissioner Winton B. Rankin and Associate Commissioner for Compliance J. Kenneth Kirk, were transferred from the agency.

Edwards was praised by a former associate on the AMA staff, C. Joseph Stetler, president of the Pharmaceutical Association, as being highly qualified by his scientific and administrative background.

The new FDA head said he would bring "hard-nosed management principles" to the agency and work more closely with industry, but that his administration of FDA would be oriented to the consumer. He said his decisions as a government official will not be influenced by his former association with the AMA.

* * *

Minutes, House of Delegates, November 23, 1969

The House of Delegates of the Arkansas Medical Society was called to order at 3:35 P.M. on Sunday, November 23, 1969, by the speaker, Dr. Amall Chudy. Invocation was by Dr. Joseph Norton.

The roll call of delegates was by the executive vice president, Mr. Schaefer. The following delegates, councilors, officers, and members seated as delegates were present:

ARKANSAS	R. H. Whitehead
BAXTER	John F. Guenthner
BOONE	Rhys A. Williams
CHICOT	Major E. Smith
CLARK	Eli Gary
CLEBURNE	William M. Wells
COLUMBIA	Paul Sizemore
CRAIGHEAD-POINSETT	Vestal B. Smith
CRAWFORD	Millard C. Edds
DREW	C. Lewis Hyatt
GARLAND	William R. Mashburn
	Cecil Parkerson
	John W. Trieschmann
GREENE-CLAY	Asa A. Crow
HEMPSTEAD	C. Lynn Harris
INDEPENDENCE	Jim E. Lytle
JEFFERSON	Ross E. Maynard
	W. R. Meredith
LEE	Dwight W. Gray
LINCOLN	James W. Freeland
LONOKE	Fred C. Inman, Jr.
NEVADA	H. Blake Crow
OUACHITA	James Guthrie
PHILLIPS	Reuben L. Chrestman, Jr.
POLK	Calvin D. Austin
POPE-YELL	Roy I. Millard
	Charles F. Wilkins, Jr.
PULASKI	Frank Padberg
	James L. Smith
	F. R. Buchanan
	John McCollough Smith
	Gilbert O. Dean
	Edgar J. Easley
	Samuel B. Thompson
	William S. Orr, Jr.
	James G. Stuckey
	G. Thomas Jansen
	W. Myers Smith
	Winston K. Shorey
	Fred O. Henker, III
SALINE	Donald S. Viner
SEARCY	John A. Hall
SEBASTIAN	Neil E. Crow
	A. C. Bradford
	Carl L. Williams
	Charles S. Lane, Jr.
WASHINGTON	J. Warren Murry
	R. A. Etherington
	Morriss Henry
WHITE	John Bell
COUNCILORS	Eldon Fairley
	Paul Gray, Hugh Edwards
	Dwight Gray, L. J. P. Bell
	Wayne Lazenby
	Raymond Irwin
	Kenneth R. Duzan
	John P. Wood
	Karlton Kemp
	James C. Bethel
	W. Payton Kolb
	William S. Orr, Jr.
	Henry V. Kirby
	C. C. Long, A. S. Koenig
OFFICERS:	President Ross Fowler
	President-elect J. W. Kennedy
	Speaker Amail Chudy
	Vice Speaker Charles F. Wilkins
	Secretary Elvin Shuffield

Treasurer Ben N. Saltzman
PAST PRESIDENTS L. A. Whittaker
C. R. Ellis
Joseph A. Norton
Joe Verser
C. Lewis Hyatt
H. W. Thomas

Speaker Chudy called on Mr. Schaefer for introductions. Mr. Paul Berry, the assistant to the Executive Vice President in the headquarters office of the Society, and Mr. Leon Swatzell of the Regional Office of the American Medical Association in Memphis, were presented to the group.

Speaker Chudy called on Dr. Frank Padberg, chairman of the Society's Sub-Committee on Liaison with the Nursing Profession. Dr. Padberg discussed plans for a physician-nurse workshop after the first of the year and encouraged physician participation.

Speaker Chudy called on Dr. Joe Verser, Secretary of the Arkansas State Medical Board, for a discussion of Proposal 112 of the Committee on Organization of the Administrative Department of the Executive Branch of the Government, Arkansas Constitutional Convention. The original proposal was to consolidate the various state boards under a lay head. A revised proposal numbered 88 was subsequently approved by the Convention; it will be given final review by the Convention when it reconvenes in January. Proposal 88 provides that "the professional licensing and disciplinary boards established by law may, but need not, be allocated within such principal departments". Dr. Verser spoke on the dangers of having the State Medical Board grouped with other boards under a single department subject to political pressures. He voiced opposition to having Proposal 112 (88) included in the proposed new constitution.

Speaker Chudy requested that Mrs. Charles F. Wilkins, Jr., of Russellville stand and be recognized. She is the wife of a practicing physician and a member of the Constitutional Convention. Mrs. Wilkins was given a round of applause by the House for her work with the Constitutional Convention.

Speaker Chudy introduced Mr. Len Blaylock, Commissioner of Public Welfare, for a discussion of the Medicaid Program which will be implemented in Arkansas at the first of the year.

Mr. Blaylock advised that the Department's plan for the Medicaid Program, though not yet officially approved, would cover the following services:

1. In-hospital services based on a physician's certification as to medical necessity and to be paid on a reasonable-cost basis. This service will be limited to 20 days per year with prior authorization for any extension that is needed medically.
2. Out-patient hospital services limited to 3 visits a year with prior authorization for extension with medical need.
3. Laboratory and x-ray services when ordered by a physician, may be furnished in a physician's office or a certified independent laboratory which meets the requirements for participation in Title XVIII (Medicare), limited to $50 per year with prior authorization of extension on medical need.
4. Skilled nursing home services for individuals 21 years or older with intermediate nursing care provided under Title XVI.
5. Physicians' services—whether furnished in office, patient's home, hospital, skill nursing home, or elsewhere.
   Out-patient physician visits are to be limited to twelve per year.
   In-patient physician services including all services not included in the cost of hospitalization directly related to improved hospitalization.

In addition to the above-listed five basic services, dental services will be covered and glasses will be furnished in connection with cataract surgery. Drugs will be furnished for glaucoma with prior authorization; transportation by publice carrier will be covered with prior authorization; other diagnostic screening and treatment services for individuals who are under the age of 21 will also be offered.

Mr. Blaylock explained that the supplemental medical care program at the University of Arkansas Medical Center can expand on some services when need is established.

Those eligible for these services are:

All individuals receiving aid and assistance under the State Plan for Aid to the Aged, Aid to the Blind, and Aid to the Disabled. Also, for persons who are eligible for Aid for Families with Dependent Children and all children for whom Child Welfare has legal custody. Basically, this means only those people who are eligible for a

money grant, or persons who are in a family that are essential persons in that family will be covered.

Mr. Blaylock estimated that 90,000 adults and 35,000 children would be covered under the Medicaid Program. Questions as to Medicaid eligibility should be directed to the county welfare office of the residence of the person served.

The Welfare Department plans to pay usual and customary fees up to a maximum prevailing rate set by federal regulations. Billing forms are being developed. The Department requests the assistance of physicians in submitting invoices for services furnished as soon as possible.

Speaker Chudy then called on Dr. Elvin Shuffield, chairman of the Legislative Committee. Dr. Shuffield discussed the possibility of a special session of the Legislature being called and legislation of interest to the medical profession which may be introduced in such special session.

Speaker Chudy expressed thanks to Dr. Shuffield on behalf of the Society for his excellent work and many hours devoted to the medical profession.

Speaker Chudy introduced Mr. Leon Swatzell of the Regional Office of the American Medical Association. Mr. Swatzell spoke concerning Ark-Pac and Am-Pac and encouraged physician membership as well as participation and interest in the workings of government at every level.

Speaker Chudy recognized Dr. H. W. Thomas who advised the House of the illness of Dr. Robert McCrary of Hot Springs, councilor from the seventh district. Upon the motion of Thomas and Ellis, the House voted to take appropriate recognition of Dr. McCrary's faithful attendance in the past, his services to medicine, and his present illness. Dr. Chudy encouraged members of the House to offer a prayer for Dr. McCrary's rapid recovery.

Speaker Chudy recognized Dr. Jack W. Kennedy, delegate to AMA. Dr. Kennedy spoke briefly concerning a proposal before the AMA House of Delegates recommending the establishment of a Council on Family Practice. Upon motion of Shuffield and Shorey, the House voted approval of the delegates' support of the proposal.

Speaker Chudy expressed thanks to the people from the home office and to the membership for attending the Sunday meeting.

The House adjourned at 4:30 P.M.

APPROVED: Amail Chudy, M.D.
Speaker, House of Delegates
Arkansas Medical Society

Council Minutes, Sunday, January 25, 1970
Little Rock, Arkansas

The Council of the Arkansas Medical Society met in Little Rock at 12:00 noon, Sunday, January 25, 1970. Present were: Wood, Fowler, Kennedy, Shuffield, Price, P. Gray, Bell, Irwin, Lazenby, Duzan, Wynne, Kemp, Bethel, Kirby, Koenig, Snodgrass, Verser, Thomas, Whittaker, Kahn, Wilkins, George Mitchell, Winston Shorey, Asa Crow, Henry Crane, Rex Ramsay, Thomas Honeycutt, Frank Padberg, Theodore Panos, Martin Heidgen, Mrs. Joyce Wilkins, Mr. Jim Harper, Mr. Kermit Tracy, Mr. Don Thompson, Miss Leah Richmond, Mr. Paul Berry and Mr. Paul Schaefer.

The Council transacted business as follows:

I. Arkansas SAMA President, Mr. Don Thompson, outlined his projected program for the Arkansas Chapter of the Student American Medical Association. The program included travel expenses for Chapter delegates to the national SAMA convention and expenses for out-of-state speakers for SAMA programs, for which Mr. Thompson requested subsidy in the amount of $1,500. Some members of the Council questioned Mr. Thompson regarding editorials appearing in the student newspaper at the University of Arkansas Medical Center. After some discussion, the Council voted to take Mr. Thompson's financial request under consideration.

II. Upon the motion of Wynne and Bethel, the Council approved the presentation of a resolution to the Arkansas State Police praising the traffic safety program which resulted in a reduction of traffic fatalities in the State during 1969. The presentation had been made upon the authority of the Executive Committee.

III. The Sub-Committee on Aging recommended that the Legislative Committee submit legislation which would relieve physicians of the responsibility of designating which applicants should not receive licenses to operate motor vehicles. Upon the motion of Shuffield and Price, the Council voted to request the Committees on Aging and Traffic Safety to submit proposed legislation to the Committee on Leg-

islation.

IV. Chairman Wood announced that Dr. Stanley Applegate, a Council member, had been featured as a "Society Stemwinder" in the November-December 1969 issue of the American Medical Association *PR Doctor*. An artist's original sketch of Dr. Applegate, which was used in connection with the column, was on hand for presentation to Dr. Applegate. In Dr. Applegate's absence, it was decided to postpone the presentation until the next Council meeting.

V. Mrs. Charles F. Wilkins, Jr., representing the Woman's Auxiliary to the American Medical Association, called attention to the low number of donations from Arkansas to the AMA-ERF. She requested that the job of raising money for the foundation be assigned by the Society to the Auxiliary and that she be given permission to obtain information from AMA on the project. Upon the motion of Wynne and Shuffield, Mrs. Wilkins was authorized to obtain the necessary information from the AMA-ERF staff. The matter is then to be referred to the Medical Education Committee.

VI. In the absence of Dr. W. R. Brooksher, chairman of the Budget Committee, Dr. H. W. Thomas presented the budget. After some discussion of the increased rent, it was decided to explore the possibility of obtaining a long-term lease at no higher budget rental than that proposed in the 1970 budget. Upon the motion of Fowler and Koenig, the budget was accepted and approved.

VII. Mr. Jim Harper of Rather, Beyer and Harper Insurance Agency presented proposed improvements in the present Group Disability Insurance plan now carried by the Arkansas Medical Society. Improvements would include a guaranteed renewable clause and a new step-rate method of premiums lowering the rates for the younger members. Upon the motion of Kennedy and Koenig, the new plan was approved for the Society.

VIII. The Council considered the request by Dr. Larkin Wilson and Dr. Jacob Ellis that the Council take a clear and firm position on the Union County Resolution protesting Blue Cross-Blue Shield requirements that Medicare claims be accompanied by specific information on treatments. On the motion of Koenig and Irwin, the Council voted to reaffirm present Medical Society policy of cooperating with the fiscal administrators and government agencies to try to make these programs work with the least interference and with the traditional aims and methods of the private practice of medicine. Dr. Duzan voted "no" on the motion. Dr. Duzan further stated that he felt that this statement of policy was too indefinite to satisfy the Union County Society. Upon the motion of Koenig and Kemp, the Executive Committee was directed to write the Union County Society a letter which would satisfy that group's desire for a clear and firm decision. Dr. Wynne voted "no".

IX. Dr. Shuffield apprised the Council of difficulties encountered by nurse anesthetists in being paid by the Welfare Department for giving anesthetics under Medicaid. Upon the motion of Shuffield and Kennedy, the Council voted to request the Welfare Department to work out a practical method of reimbursing nurse anesthetists for their services.

X. Dr. Frank Padberg announced that his Committee on Liaison with the Nursing Profession had arranged a program to be held on February 15th in St. Vincent Infirmary in Little Rock between 10:30 A.M. and 3:30 P.M. He urged all physicians to attend and requested $75 for expense of having a brochure printed. Upon the motion of Kennedy and Koenig, the Council voted approval of the expenditure of the funds and complimented Dr. Padberg on his work.

XI. Chairman Wood called the attention of the Council to the fact that the members of the ARK-PAC Board of Trustees were to be elected annually by the Council of the Arkansas Medical Society. Board members are appointed to a term of one year and no member shall serve for more than five consecutive years. No officer may serve for more than two years as an officer. Dr. Wood requested that each member of the Council consider nominations for the

board which has been relatively inactive in recent years. Dr. Wood requested that each member of the Council discuss ARK-PAC work with prospective nominees. He requested that the prospects' names be sent in to the Arkansas Medical Society headquarters office in Fort Smith within two weeks. The complete list of names will then be distributed to the members of the Council for their selection at the next Council meeting.

XII. The report of the Sub-Committee on Mental Health was considered. The various recommendations of the report were referred to appropriate committees of the Society.

XIII. Dr. Ross Fowler reported that the Society's Committee on Immunization had recommended against a measles immunization program at this time. It was pointed out that this was a recommendation against a state-wide program and would not preclude a county society undertaking a mass immunization. Upon the motion of Fowler and Bethel, the Council voted to table the report.

XIV. Dr. Verser reported on the Legislative Council hearing on January 23rd having to do with increasing the privileges of osteopaths in the State of Arkansas. He advised the Council that negotiations were under way with the osteopaths which might include some concessions to them.

XV. Dr. Theodore Panos reported on the White House Conference on Nutrition which he attended as a Medical Society representative. Dr. Panos was asked to summarize his report for publication in the Journal.

XVI. Dr. Fowler described the meeting of the Public Relations Committee with the Committee on Pharmacy and the Committee on Physical Fitness and School Health which had been conducted by the Executive Committee on Saturday night preceding the Council meeting. Upon the motion of Kemp and Price, the Council approved the Executive Committee recommendation that the Public Relations Committee be designated to head up the efforts of these three committees to carry on a public education program on drug abuse in the State of Arkansas.

XVII. Mr. Don Thompson returned with a budget calling for $2,275 for travel and other activities of SAMA. Upon the motion of Wynne and Fowler, the Council voted to limit the Medical Society contribution to SAMA to the $600 included in the budget for that purpose.

The meeting adjourned at 3:30 P.M.

Approved: John P. Wood, M.D.
Chairman of the Council

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MEDICREDIT

The following is a summary of the American Medical Association's proposal for financing of a universal health plan.

Summary of Provisions Contained in a Bill "To Provide for Medical and Hospital Care Through Voluntary Health Insurance Financed in Whole or in Part by Income Tax Credits"

91st Congress

Section 1 . . . declares that it is in the public interest for the government to provide assistance and encouragement to all persons who seek protection for insuring against the expenses of illness and that private health insurance coverage is an appropriate means to do so since, through competition, incentives are provided for the lowering of health care costs, the introduction of innovations in the delivery of health care and the maintaining of quality health care. It then states, as the bill's purpose, to provide a mechanism for every resident to obtain comprehensive health insurance of his choice.

Section 2 . . . amends the Internal Revenue Code by adding a new section of income tax credits for the cost of health insurance premiums. Subsection (a) sets out how the amount of credit is calculated and names as eligible taxpayers every individual who elects to be covered under this Act and who is not eligible to receive military medical care. The tax credit is a percentage of the actual cost of the insurance premium(s), with the percentage based on the individual's tax liability as computed on his personal income tax return. The percentage ranges from a high of 100% for the individual with a tax liability of $300 or less to a low of 10% for the individual with a tax liability of more than $1300. Subsection (a) further states that the credit is available only if the premium(s) have been paid for "qualified medical care insurance policies" covering the taxpayer, his spouse, and dependents.

In the event that more than one policy is purchased by the taxpayer, subsection (b) limits the total credit to the applicable percentage determined by the table provided in subsection (a).

Subsection (c) provides that the taxpayer may elect to receive a "health insurance certificate" equal to the applicable percentage of the allowable premium. The certificate is to be redeemed by the carrier who accepts it in payment of the premium for a "qualified medical care insurance policy." In order to be so qualified, the carrier and the plan must be registered by the appropriate state agency.

Subsection (d) defines a "qualified medical care insurance policy" as one offered by a carrier who has been registered in the state by the appropriate agency, which has also registered the package of benefits and premium offered by the carrier. The "qualified" policy must include:

Part I 60 days of inpatient hospital services and emergency room and outpatient services; and

Part II All medical services wherever rendered.

Deductibles and coinsurance:

Part I $50 on inpatient services, 20% of the first $500 incurred expenses for emergency room and outpatient services;

Part II 20% of the first $500 incurred expenses.

The qualified policy may also include any of the following as supplemental coverage:

Part III Prescription drugs ($50 deductible per year); additional hospital days (20% coinsurance); cost of blood in excess of three pints; and other personal health services furnished pursuant to written direction of physician (20% coinsurance).

A carrier is defined as a voluntary association, corporation, partnership, etc., or other non-governmental organization, lawfully offering a health benefits insurance plan.

Subsection (e) provides for the redemption by the IRS of health insurance certificates.

Subsection (f) provides technical amendments and subsection (g) establishes an eleven man Health Insurance Advisory Board to include the Secretary of HEW, the Commissioner of IRS, and nine public members. The duties of the Board are set out in subsection (h) and include the development of guidelines and regulations to establish minimum standards for the care of state insurance departments in qualifying a carrier and its plan, and the development of programs for the maintaining of quality medical care and the effective utilization of available financial resources, health manpower and facilities, through means which provide for the participation of carriers and providers of service.

Subsections (i) and (j) provide authority for the state designated agency to qualify carriers and plans and issue registration numbers to those so qualified, and subsection (k) requires an employer or an association which purchases a qualified policy to notify its employees of the amount of their contribution and the registration number of the policy.

Section 3 . . . provides that the Part B medicare enrollee may use his health insurance certificate to pay for his Part B premium expense.

Section 4 . . . authorizes the Secretary of HEW to contract with a state to insure coverage under this program for Title XIX (medicaid) eligibles in that state.

Section 5 . . . is a prohibition against federal interference—similar to the prohibition contained in the medicare law.

Section 6 . . . provides that the effective date of the Act shall be the taxable year beginning after December 31, 1969.

ANSWER—Radiology Case of the Month

DIAGNOSIS: Sorcoidosis

Sorcoid occurs most commonly in young adults ond in the United Stotes the Negro is offected 15 times more frequently thon the Coucosion. The tuberculin skin test is usuolly negotive. Potients ore frequently osymptomotic ond the diognosis is often first suggested from o routine chest film.

Blood chemistry will reveal elevoted colcium in obout one holf the coses, ond the A-G ratio is reversed. The Kveim test is positive in 75 per cent of the coses.

The roentgenogrom moy show disseminoted biloteral miliory or coorsely nodulor lesions or reticuloted lineor stronds. Hilor odenopothy is seen in 75 per cent of the coses, ond may be found with or without pulmonory infiltrotion. The lesions may regress spontoneously or with steroid theropy.

REFERENCES:

1) Ellis, K., ond Renthol, G.: Pulmonory Sorcoidosis. Am. J. Roentg. Rod. Ther., 88:1070, 1962
2) Atwood, W. G., ond Nelson, C. T.: Sorcoidosis. Med. Clin. N. Amer. 49:783, 1965

THINGS TO COME

SYMPOSIUM ON MANAGEMENT AND CARE OF RESPIRATORY INSUFFICIENCY UNIVERSITY OF COLORADO SCHOOL OF MEDICINE April 15-17, 1970

This third annual three-day symposium for physicians is designed to review modern methods of respiratory care for patients both acutely and chronically ill. Emphais is directed toward patients with chronic airway obstruction and is oriented toward both intensive and rehabilitative care. Aspects of management of respiratory insufficiency include post-operative states, trauma, poisonings, and neurological emergencies are also considered. Informal lectures, movies, video tapes, and discussions are designed to review the most up-to-date methods and innovations in respiratory care available today.

OBITUARY

Dr. Morgan C. Berry

Dr. Morgan C. Berry, age 79, of Little Rock and Malvern, died January 7, 1970. He was born in 1890 in Malvern where he practiced medicine from 1950 until the time of his death, having spent thirty years in the United States Army and retired with the rank of Colonel.

Dr. Berry received his M.D. from the University of Arkansas School of Medicine in 1916. He was a Fellow of the American College of Surgeons, a member of the Hot Spring County and Arkansas Medical Societies, and the American Medical Association. While in service to his country during World War II, Dr. Berry was awarded the Legion of Merit with Oak Leaf Cluster and the Bronze Star.

Survivors include his wife; a son, Dr. Fred B. Berry of Little Rock; and two daughters, Dr. Daisilee Berry of Little Rock and Miss Flo Dodge of Memphis.

Dr. Jacob Brad Hesterly

Dr. Jacob Brad Hesterly of Prescott died January 20, 1970. He was 80 years of age and had been a physician for more than fifty years.

Born in 1891, Dr. Hesterly graduated from the University of Arkansas School of Medicine in 1915 and began to practice in that same year. A veteran of World War I, a past president of the Rotary Club, and former member of the local school board, he was one of the initiators of the hot lunch programs for Prescott school children.

Dr. Hesterly was a member of the Nevada County and Arkansas Medical Societies and the American Medical Association.

Survivors include his wife, a son, Dr. Charles Hesterly of Hawaii, a brother, a sister, and three grandchildren.

Mrs. W. R. Brooksher

Mrs. W. R. Brooksher, wife of Dr. W. R. Brooksher, died January 15, 1970, at her home in Fort Smith. A native of Fort Smith, Mrs. Brooksher was the daughter of Mr. and Mrs. Brooks Stephens, a pioneer family of that city.

Mrs. Brooksher was a past president of the Woman's Auxiliary to the Arkansas Medical Society, a past vice president of the Woman's Auxiliary to the American Medical Association, and a former commander of the Arkansas Division of

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ANSWER—Electrocardiogram of the Month

RATE: 62 RHYTHM: Sinus

PR: .19 sec. QRS: .07 sec. QT: .... sec.

SIGNIFICANT ABNORMALITIES:

Delayed intrinsicoid, left.

Prominent U waves partially fused c T.

INTERPRETATION: Abnormal

Left ventricular hypertrophy.

Hypokalemia.

the American Cancer Society. Until the beginning of her illness in 1958, she was active in Auxiliary and Cancer Society work and was interested in State government activities. Mrs. Brooksher was the recipient of many honors in recognition of her organizational work.

Survivors other than her husband include two brothers and two sisters.



PERSONAL AND NEWS ITEMS

Dr. Poindexter Speaks to Kiwanis Club

Dr. Douglas A. Poindexter was the featured speaker recently at a meeting of the Conway Kiwanis Club. His remarks dealt with the problems confronting contemporary society that emanate from drug addiction and the world's population explosion.

Medicine and Religion

"The Care of the Dying" was the subject of a joint meeting in January between ministers of the Greater Camden area and the Ouachita County Medical Society. Dr. Kenneth Duzan, pathologist from El Dorado and a member of the Council of the Arkansas Medical Society from the fifth district, was the featured physician speaker at the well-attended dinner meeting. Dr. John Miller of Camden, a member of the State Society's Committee on Medicine and religion, was in charge of the program. Dr. Fred Henker of Little Rock, another member of the State Society Committee, attended the meeting.

St. Vincent Infirmary Elects Three Officers and Seven Department Chiefs

Dr. James R. Morrison has been elected chief of staff at St. Vincent Infirmary, succeeding Dr. Andrew A. Pringos. Dr. Deane D. Wallace was named vice chief of staff and Dr. John R. Stotts was elected secretary-treasurer.

Newly designated department chiefs are Dr. William W. Abbott, surgery; Dr. Ben O. Price, medicine; Dr. Melvin R. McCaskill, obstetrics and gynecology; Dr. J. B. Cross, E.E.N.T.; Dr. Gilbert Buchanan, pediatrics; and Dr. William O. Young, psychiatry. All are of Little Rock.

Dr. Choate Retires

Dr. Hoyt L. Choate of Little Rock has retired after forty years of medical practice.

Dr. Pupsta Honored

Dr. Benedict F. Pupsta of Clarendon received the best wishes of friends recently at a birthday party in his honor at Pines Country Club.

Dr. Jones Speaks at National Meeting

Speaking at the annual session of the American Academy of Orthopedic Surgeons meeting in Chicago in January, Dr. Kenneth G. Jones of Little Rock reported to that assemblage the results of his work with the reconstruction of knees having irrevocably damaged cruciates.

"Ninth National Conference on Therapies for Advanced Cancers"

August 20-22 (Thursday-Saturday), 1970, University of Wisconsin Post-Graduate Center.

Sponsor: Division of Clinical Oncology, University of Wisconsin

Chairman: Fred J. Ansfield, M.D., Professor of Clinical Oncology

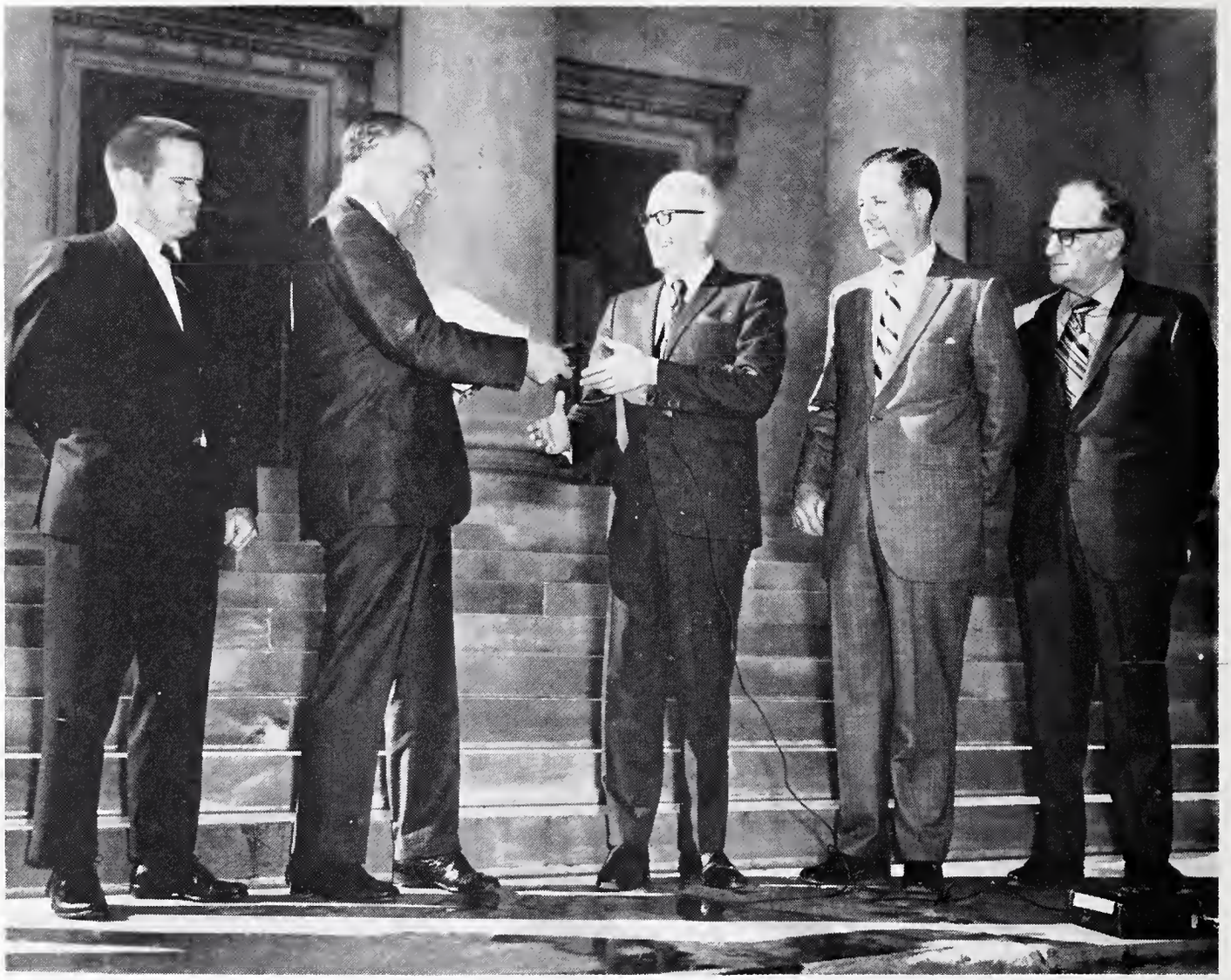
Information from program coordinator: R. J. Samp, M.D., University Hospitals, Madison, Wisconsin 53706

Dr. Dudley Certified As Diplomate

Dr. Guilford M. Dudley, staff member of the Harris Hospital and Clinic in Newport, was notified in January of his certification by the American Board of Internal Medicine as a Diplomate in Internal Medicine.

Dr. Levy Addressed Methodist Meeting

Dr. Jerome Levy of Little Rock was the guest speaker at a recent luncheon meeting at the First United Methodist Church in Stuttgart. His discussion was entitled "Medicine and Religion". Dr. Levy is chairman of the Arkansas Medical Society committee for that subject.



"Arkansas Medical Society President, Ross Fowler, M.D., of Harrison, presents Society resolution to Colonel Ralph Scott, accepting on behalf of the Arkansas State Police. Robert Faulkner, Executive Secretary to the Governor, (Fowler, Scott) Dr. Elvin Shuffield of Little Rock, and Dr. Joe Verser of Harrisburg, from left to right, also participated in the recent presentation made on the steps of the State Capitol Building in Little Rock." (See related resolution in appropriate section of Journal.)

Doctors Take Part in Family Planning Seminar

Several members of the Arkansas Medical Society recently played significant roles in making an all-day seminar on family planning held January 22nd in Pine Bluff highly informative and successful. Dr. J. P. Price, Monticello, and Dr. Carl Hyman, Pine Bluff, composed half of a four-man panel which addressed itself to the topic "Intrinsic Value of Family Planning". Dr. Henry Crane, president of the Jefferson County Medical Society which co-sponsored the session in conjunction with the County Health Department, presided in the afternoon session and introduced Dr. Peter Peacock, chairman of the University of Alabama's Public Health Department, who discussed "Man's Responsibility to His Environment". Also included in the afternoon agenda was a panel of five presentation concerning "The Price We Pay" on which Dr. Francis M. Henderson of Pine Bluff participated.

At least one resulting impression of the seminar was *not* that the physician and the public health official should ask couples to give up their privilege of child rearing but rather that health experts were hoping to cause people to think more seriously about what they are doing. Instruction to couples as to methods of controlling the number and spacing of their children are directed toward assuring each child being both wanted and secured by proper care.

Board Honors Dr. Edmondson

Dr. Retia Lynn Edmondson, Texarkana neurosurgeon, has been recognized as a "Member of Eminent Distinction" by the board of trustees of the National Register of Prominent Americans.

Dr. Wilson Takes Part in Regional Meet

Dr. John H. Wilson, from Magnolia and chairman of the Southern State College board of trustees, was one of the speakers during a morning session of the program of the Association of Governing Boards of Universities and Colleges held January 13-14 in Houston. The discussion centered chiefly on the complexities couched in the difficult problems faced by college and university boards during 1969.

Dr. Toombs Serving as Medical Services Director for Children's Colony Unit

Dr. Vernon Toombs, in early January, assumed his duties as Medical Services Director of the Arkadelphia Unit of the Arkansas Children's Colony. Dr. Toombs, a pediatrician, is a 1942 graduate of the University of Arkansas School of Medicine and has been associated the past seventeen years with the Arkansas Pediatrics Clinic in Little Rock.

Dardanelle Clinic Announces New Associate

Drs. Jerome Luker, James L. Maupin, and Gene D. Ring announced the association of Dr. James D. Harbison with them in the Dardanelle Clinic as of February 1, 1970. Dr. Harbison, a native of Hamburg, had, from 1964 until December 1969, been in general practice at Lake Village where he was a past president and past secretary of the Chicot Medical Society.

Fifth Councilor District Meets

The Fifth Councilor District held its annual meeting at the El Dorado Golf and Country Club, January 21, 1970. The scientific program was presented by members of the staff of the Oschner Clinic of New Orleans. The speakers and their topics were Dr. Joseph F. Mably on "The Treatment of Burns" and Dr. William M. P. McKinnon on "Blunt Trauma to the Abdomen".

Doctors Attend Refresher Course in Family Practice

Physicians from all over the state were in attendance at the four-day refresher course in family practice that began January 10th at the University of Arkansas Medical Center. Among those present were Drs. Eli Gary and H. D. Luck of Arkadelphia; Dr. E. Lloyd Norris of Beebe; Dr. N. C. David, Jr., Brinkley; Drs. H. R. Harris and Albert W. Lazenby, Dumas; Dr. Waldo A. Regnier, Crossett; Dr. George Warren, Smackover; Dr. Jack M. Shepard, El Dorado; Drs. James W. Durham, George A. McCrary, James R. Weber, and Thomas H. Wortham of Jacksonville; Dr. C. W. Jackson, Judsonia; and Dr. J. W. Dorman of Springdale.

St. Edwards Selects Medical Staff Officers

Newly elected members of the Executive Committee for St. Edwards Mercy Hospital of Fort Smith medical staff include: Dr. S. E. Landrum, Chief of Staff elect; Dr. Kemal Kutait, Chief of Staff for 1970; Dr. John Watts, Pediatrics; Dr. W. D. Haynes, Radiology, Dr. Joe Mason, Obstetrics and Gynecology; Dr. L. M. Henry, E.E.N.T.; Dr. W. C. Holmes, Surgery; Dr. John Simpson, Anesthesiology; Dr. Ken Lilly, General Practice; Dr. O. L. Davenport, Pathology; Dr. McDonald Poe, Internal Medicine; Dr. Paul Rodgers, Radiology; Dr. Fred Feder, Urology; Dr. R. G. Girkin, Pathology; Dr. James Buie, Orthopedics.

White County Memorial Hospital Choses Staff Officers

Dr. A. R. Brown was named Chief of Staff for White County Memorial Hospital of Searcy recently. Named to serve with him are Dr. Stanley Schwartz, vice chief of staff and Dr. J. E. Bell, secretary. Congressman Wilbur Mills was the special guest of Dr. Brown at the staff meeting. Congressman Mills spoke briefly on the trends and programs of the federal government dealing with health services.

Dr. Harrel is Guest Lecturer

Dr. John Harrel, pediatrician with the Arkansas State Health Department, spoke at a February meeting of the Perrin Elementary Parent Teachers Association in Benton on learning disabilities.

Dr. Thomas on Arkansas A & M Smoking Forum Program

Dr. H. W. Thomas of Dermott keynoted a recent "Smoking and Health Conference" at Arkansas A & M in Monticello with his address entitled "Smoke Now, Pay Later".

Columbia County Society Proceedings

At the late January meeting of the Columbia County Medical Society, the following officers for 1970 were elected: Dr. Scott McMahen, president; Dr. Ronald Baldwin, vice-president; Dr.

Charles H. Weber, secretary-treasurer; Dr. John E. Alexander, delegate; and Dr. Charles Kelley, alternate delegate.

Dr. Burton Attends Board Meeting

Dr. George C. Burton, El Dorado radiologist and former member of the Council of the Arkansas Medical Society, attended a meeting of the Board of Trustees of the American Physicians Guild in Atlanta, Georgia.



PROCEEDINGS OF SOCIETIES

1970 Independence County Officers

The entire slate of officers of the Independence County Medical Society was re-elected to serve for 1970.

Dr. James M. Stalker is president; Dr. Troy Raney, vice president; Dr. Chaney W. Taylor, secretary-treasurer; and Dr. Jim E. Lytle, delegate.



NEW MEMBERS

The Franklin County Medical Society has recently admitted to its membership, Dr. David Edward Raymond Blanton. Dr. Blanton was born in Wyandotte, Michigan. His first two years of undergraduate education were completed in 1960 at the Junior College of the School of the Ozarks in Clarksville. In 1962, he received the B.A. degree from the University of Arkansas.

Dr. Blanton obtained his M.D. diploma from the University of Arkansas School of Medicine, class of 1966, and thereupon did his internship at the United States Naval Hospital, Charleston, South Carolina. Dr. Blanton moved to Ozark from Imperial Beach, California, upon completion of his active duty obligation.

Associated with Dr. C. C. Long, Dr. Blanton is in general practice at 110 West Commercial, Ozark.



Woman's Auxiliary

Doctor's Wife Honored by Jacksonville Sertoma Club

Mrs. Betty Wortham, wife of Dr. Thomas H. Wortham, was selected earlier this year as the recipient of the Jacksonville Sertoma Club's "Service to Mankind" award.



BOOK REVIEWS

CRISIS FLEETING, James H. Stone, numerous authors, published by Superintendent of Documents, Government Printing Office, Washington, D. C., 1969.

Prevention of Rapid Immune Elimination of Anti-lymphocytic Globulin in Transplant Patients

W. T. Butler et al (VA Hosp, Houston)
Nature 224:856-859 (Nov 29) 1969

Patients treated with anti-lymphocytic globulin developed antibody to horse immunoglobulin G in a manner similar to that which had been demonstrated previously in experimental animals treated with ALG. To circumvent the problem of antibody formation against the ALG, prior treatment of human allograft recipients with aggregate-free normal horse immunoglobulin is necessary to prevent antibody formation in subsequent therapy.

TUBERCULOSIS ABSTRACTS



Sponsored by Arkansas Tuberculosis and Respiratory Disease Association

TUBERCULOUS PERITONITIS

Percutaneous biopsy of the peritoneum was a simple and quick method of diagnosing tuberculous peritonitis in forty-seven patients. The condition was successfully treated with antituberculosis drugs. Addition of a steroid improved long-term results.

Forty-seven patients with tuberculous peritonitis were followed for periods ranging from two to almost six years. The purpose was to ascertain how frequently such patients have tuberculous foci in the lung, intestine, or fallopian tube.

It was also intended to test the usefulness of histologic techniques for the diagnosis of peritoneal tuberculosis, and to find out whether the involvement of other serous membranes such as the pleura and pericardium occurred often in tuberculous peritonitis. Effectiveness of antituberculosis drugs and the role of adrenocorticosteroids in the treatment of this condition were also evaluated.

Of the 47 patients, 20 were men and 27 were women. All had been admitted to a medical ward of the Irwin Hospital in New Delhi, India, between 1963 and 1966.

In each case diagnosis was based on the finding of a caseating granuloma in a biopsy specimen of the peritoneum. Other studies included X-ray examination of the chest, tuberculin skin tests, and, in the case of the woman, salpingograms.

All patients had fever and ascites. Other clinical manifestations included abdominal pain, often only vaguely described and vaguely localized; night sweats, anorexia, and weight loss. Before admission symptoms had been present for from two weeks to seven months. The average was three months. Total white-cell count in the peripheral blood was within normal range in 86 per cent of the patients and mildly elevated in the remaining 14 per cent. Hemoglobin values were between 10.0 and 13.0 gm per 100 ml.

None of the patients had ascitic fluid protein content below 3.0 gm per 100 ml. The highest value was 7.5 gm per 100 ml. Pleocytosis in ascitic fluid ranged between 150 and 2800 leukocytes per cubic millimeter. Lymphocytes accounted for 75 to 96 per cent of the total cell count. The tuberculin test was positive to first strength PPD in all cases.

LUNG FOCUS RARE

Only three of the patients showed a focus of infection in the lung on X-ray film. Barium studies to detect intestinal tuberculosis showed increased intestinal motility and dilatation of segments of small bowel in 24 (51 per cent) patients, but in no patient was an intrinsic intestinal lesion detected. Intravenous pyelography did not reveal renal abnormality in any of the patients, and salpingography in the women gave no evidence of a lesion in the fallopian tubes. On direct smear examination of ascitic fluid, acid-fast bacilli were found only once. Cultures, however, were positive in 39 cases.

Because of the time necessary to culture the bacilli, an evaluation of various techniques for histologic diagnosis was made.

BIOPSY PROCEDURE

Percutaneous liver biopsy was not found to be helpful. Percutaneous biopsy of the peritoneum, with the use of an Abrams needle first and a Cope needle later in the study, was tried in all 47 patients. A caseating granuloma in the biopsy specimen was demonstrated in 30 (64 per cent) of the patients. In the remaining 17 patients, peritoneoscopy was carried out. With the addition of this procedure, the success of histologic diagnosis rose to 85 per cent. In the remaining 7 patients, laparotomy was necessary to obtain histologic diagnosis. At laparotomy, the peritoneum was found to be studded with tubercles. There was thick exudate, and loops of bowel were often badly matted together.

Madan M. Singh, M.D.; Amar N. Brargave, M.D.; and Kranti P. Jain, M.D. *The New England Journal of Medicine*, November 13, 1969 (Vol. 281, No. 20).

On X-ray examination, 15 patieuts were found to have pleural effusion in small amounts. A diagnosis of "cryptic pericarditis" was made in six patients on the basis of electrocardiographic findings even though none had chest pain, pericardial friction rub, or radiologically enlarged hearts.

Antituberculosis drugs were administered to all patients. Streptomycin and isoniazid were first given. After three months, PAS was substituted for streptomycin. In all, the antituberculosis drugs were given for 18 months. Alternate patients also receive prednisone, which was gradually tapered off during the fourth month and discontinued at the eud of that month.

The antituberculosis therapy was highly effective. No deaths occurred in the patients treated. However, intestinal obstruction developed a year and a half or more later in three of the 24 patients who did not receive the steroid, and surgery was necessary. This complication was not seen in the patients who had steroids.

One of three patients with "cryptic" pericarditis who did not receive the steroid had frank manifestation of constrictive pericarditis and had to undergo surgery two and a half years later. None of three patients in the steroidtreated "cryptic" group had constrictive pericarditis. Thus, in four of the 24 patients treated without steroids, late fibrotic complications of tuberculosis developed.

The study shows that parenchymal pulmonary foci are uncommon in patients with tuberculous peritonitis, the rate in this series being only 6 per cent. It therefore seems unreasonable to attribute tuberculous peritonitis to a hematogenous spread from a concomitant pulmonary focus in the vast majority of such patients.

LATENT TUBERCULOUS FOCUS?

The evidence strongly favors the hypothesis of C. M. Nice, Jr., that tuberculous peritonitis is due to the activation of a long latent tuberculous focus in the peritoneum, perhaps established years previously as a result of hematogenous spread from a primary focus in the lung. Healing of the pulmonary focus was so complete that no X-ray evidence of a lung lesiou was apparent.

In the present series, percutaneous biopsy of the peritoneum was a useful method of arriving at a quick diagnosis. The success rate was high. However, the possibility of bleeding and bowel perforation must be kept in mind, and the biopsy should be performed only on patients with ascites. Patients should be followed closely for 48 hours after the procedure. If a patient's condition becomes worse, a diagnostic paracentesis must be performed rapidly to ascertain whether complications have developed.

The fact that no deaths occurred in the present series shows how effective antituberculosis drugs are in treating the condition. The study also points to the desirability of adding steroids to the antituberculosis drug regimen in treating tuberculous peritonitis.



Effects of Exercise on Recovery From Infectious Hepatitis

L. H. Repsher, and R. K. Freebern (Walter Reed General Hosp, Box 772, Washington, DC)
New Eng J Med 281:1393-1396 (Dec 18) 1969

The effect of strenuous exercise on the recovery time of 199 United States servicemen in Vietnam with infectious hepatitis was compared to 199 patients with infectious hepatitis treated in the customary fashion. The exercise group was started on the program of strenuous exercise for approximately three hours daily at the time their symptoms were considered to be slight, irrespective of the degree of liver function abnormality. No statistical difference was found between the two groups when compared for the duration of elevation of serum bilirubin or relapse rate. Exercise did not adversely affect those whose maximum serum bilirubin was greater than 3.0 mg/100 cc. No difference in duration of disease was found in those who were involved in strenuous activity at the time of onset of illness as compared to those involved in light activity. Strenuous activity does not adversely affect the acute course of infectious hepatatis in previously healthy young males.

ANNUAL MEETING PROGRAM

April 26 – 29, 1970 Hot Springs



CONVENTION OFFICIALS

GENERAL CHAIRMAN: Wright Hawkins, M.D., Fort Smith

PROGRAM COMMITTEE:

J. Harry Hayes, Jr., M.D., Little Rock

Amail Chudy, M.D., North Little Rock

John W. Lane, M.D., Little Rock

Joseph L. Rosenzweig, M.D., Hot Springs

John McCollough Smith, M.D., Little Rock

Art B. Martin, M.D., Fort Smith

Joseph S. Robinette, M.D., Pine Bluff

Betty Ann Lowe, M.D., Texarkana

A. S. Koenig, M.D., Fort Smith

Dwight W. Gray, M.D., Marianna

SCIENTIFIC EXHIBITS CHAIRMAN: Charles W. Logan, M.D., Little Rock

GOLF TOURNAMENT CHAIRMAN: Richard Graham, M.D., Hot Springs

MEMORIAL SERVICE CHAIRMAN: G. Thomas Jansen, M.D., Little Rock

Digest of Events

REGISTRATION

The registration desk will be located on the Mezzanine of the Arlington Hotel and will be open as follows:

Sunday, April 26th	8:00 A.M. to 5:00 P.M.
Monday, April 27th	8:00 A.M. to 5:00 P.M.
Tuesday, April 28th	8:00 A.M. to 5:00 P.M.
Wednesday, April 29th	8:00 A.M. to 12:00 Noon

Registration cards and badges will be prepared in advance for the officers of the Arkansas Medical Society and for the county society delegates. Delegates are requested to present credentials in proper form when registering.

All members and visitors are required to register, as admission to all sessions will be by badge only. Bring your 1970 membership card to facilitate registration. Members of the American Medical Association from other states may register as guests.

There will be no registration fee. Purchase of tickets for social functions will be optional.

TELEPHONE SERVICE

A special convention telephone will be installed at the Society's registration desk. The telephone number will be 624-2175. Give this number to your office personnel so that they may contact you in case of an emergency.

MEETINGS OF THE COUNCIL

The Council of the Arkansas Medical Society will meet as follows:

Sunday, April 26	10:00 A.M.
Monday, April 27	7:30 A.M.
Tuesday, April 28	7:30 A.M.
Wednesday, April 29	9:00 A.M.
Wednesday, April 29	Immediately following the adjournment of the House of Delegates (Brief re-organizational meeting and group photograph of new officers)

The voting members of the Council are: The councilors, the president, the first vice president, president-elect, secretary and treasurer. The speaker, vice speaker, and past presidents are members ex-officio without vote.

HOUSE OF DELEGATES

The opening session of the House of Delegates of the Arkansas Medical Society will be called to order at 1:00 P.M. on Sunday, April 26, in Room "C" of the Conference Center, Arlington Hotel.

The closing session and election of officers will begin at 10:00 A.M. on Wednesday, April 29, in the same room.

All items of business will be referred by the Speaker of the House of Delegates to three reference committees. Open hearings on all resolutions and reports will begin at 3:30 P.M. on Sunday, April 26. Any member of the Arkansas Medical Society is welcome to attend the meetings of the reference committees and to express his views on the various reports, resolutions, etc. After the open hearings, the reference committees will go into executive session for the purpose of preparing reports and recommendations to the House of Delegates.

A constitutional amendment adopted at the 1968 convention requires that all items of business to be considered by the House must either be printed in the March issue of the Journal or submitted to the headquarters office in writing twenty days prior to the meeting. Any new business proposed during sessions of the House must have two-thirds vote of attending delegates for introduction.

SCIENTIFIC SESSIONS

The scientific program of the annual meeting will be presented on Monday and until noon on Tuesday. Distinguished speakers from various medical centers across the Nation will present lectures. All convention visitors enter the lecture hall through the exhibit area.

Section and specialty group meetings will be held on Tuesday afternoon. The Association of Tumor Clinic Staff Members in Arkansas will hold a luncheon meeting on Monday.

The complete program for the annual meeting begins on page 385.

TECHNICAL AND SCIENTIFIC EXHIBITS

Thirty-seven displays by firms whose products and services are of interest to Arkansas physicians will be housed in the Conference Center of the Hotel on the Mezzanine floor level.

In addition, there will be scientific and institutional exhibits in the adjacent area of the Conference Center. A complete list of the scientific and technical exhibits appears on pages 392 to 395. Exhibit hours are from 8:00 A.M. to 5:00 P.M. on Monday and Tuesday and from 8:00 A.M. to 11:00 A.M. on Wednesday.

FREE COFFEE

The Arkansas State Medical Assistants Society will serve coffee in the exhibit area of the Conference Center. Members are urged to visit the medical assistants for a cup of coffee and discussion of the medical assistants' organization.

SUNDAY EVENING RECEPTION

The Council will host a reception for all members and guests of the Arkansas Medical Society at 6:30 P.M. on Sunday, April 26th, in the Arlington Hotel. All members are encouraged to attend and become better acquainted with the officers of the Society.

GOLF TOURNAMENT

The Golf Tournament will be held at the Hot Springs Country Club. Dr. Richard Graham of Hot Springs is chairman of the Golf Tournament Committee. Members may play any time Sunday, Monday and Tuesday. There will be 18 holes to play. Prizes will be given at the banquet on Tuesday evening.

Dr. Graham urges members to bring their golf clubs and participate in the tournament.

ARK-PAC MEETING

Dr. Henry A. Crane, chairman, has announced that there will be a membership meeting of Ark-Pac on Sunday, April 26th, at 9:30 A.M. in the Arlington Hotel. All Ark-Pac members are urged to attend.

Dr. Crane also announced plans for an Ark-Pac luncheon meeting at 12:15 P.M. on Monday, April 27th, in the Arlington Hotel. All members of the Society and the Woman's Auxiliary are invited to attend. The program will be announced at a later date.

FIFTY YEAR CLUB BREAKFAST

The Society will host a breakfast for members of the Fifty Year Club at 7:30 A.M. on Tuesday, April 28, in the Arlington Hotel. Members of the Fifty Year Club may make a reservation for the breakfast at the Society's convention registration desk.

PAST PRESIDENT'S BREAKFAST

The traditional breakfast for former presidents of the Arkansas Medical Society will be held at 7:30 A.M. on Wednesday, April 29, in the Arlington Hotel.

MEMORIAL SERVICE

A joint Society-Auxiliary Memorial Service will be held on Tuesday morning, April 28, at 11:30 A.M. in the Ballroom of the Arlington Hotel.

MONDAY EVENING PARTY

A Polynesian Reception and Hawaiian Feast at the Majestic Hotel Convention Hall is planned for Monday evening at 7:00 P.M. There will be a buffet dinner featuring traditional Hawaiian food. Leis will be distributed to each guest and there will be Hawaiian background music and dancers for entertainment. All members are encouraged to attend. Tickets may be purchased at the Society's convention registration desk.

TUESDAY EVENING COCKTAIL PARTY

A cocktail party will precede the Inaugural Banquet on Tuesday evening. The party will be held at pool side if weather permits. Tickets will be on sale at the convention registration desk.

PRESIDENT'S INAUGURAL BANQUET

The social highlight of the 1970 annual session will be the President's Inaugural Banquet on Tuesday evening, April 28, in the Crystal Ballroom of the Arlington Hotel, beginning at 7:00 P.M.

Following dinner, Dr. Jack W. Kennedy of Arkadelphia will be inaugurated as president of the Society.

Tickets for the dinner will be available at the registration desk.

Distinguished Guest Speakers



CHARLES B. HAMMOND, M.D.

Assistont Professor, Deportment of Obstetrics ond Gynecology, Duke University Medicol Center
Durhom, North Corolino



JACK STEVENS, M.D.

Professor in Surgery, Chief, Section of Orthopedics, University of Chicogo Hospitols ond Clinics ond the Pritzker School of Medicine
Chicogo, Illinois



EDWARD J. KOWALEWSKI, M.D.

President, Americon Acodomy of Generol Proctice, Akron, Pennsylvonio



ALSON E. BRALEY, M.D.

Professor Emeritus, Deportment of Ophtholmology, University of Iowo College of Medicine
Iowo City, Iowo



GRADY L. HALLMAN, JR., M.D.

Texos Heort Institute
Houston, Texos

Distinguished Guest Speakers



WILLIAM D. DAVIS, JR., M.D.
Heod of Deportment of Internol Medicine
Chief of Section of Gostroenterology
Ochsner Clinic, New Orleans, Louisiana



DELBERT A. FISHER, M.D.
Professor of Pediatrics of the
University of Californio School of Medicine
Los Angeles, California

(PHOTOS NOT AVAILABLE)

M. JEROME STRONG, M.D.
Associate Professor of Anesthesiology
Boylor College of Medicine
Houston, Texas

ROBERT K. RHAMY, M.D.
Professor ond Chairmon, Division of Urology
Vanderbilt University School of Medicine
Nashville, Tennessee



JOHN M. DENNIS, M.D.
Professor and Heod of Department of
Radiology, University of Maryland
School of Medicine
Baltimore, Marylond

DUANE CATTERSON, M.D.
Deputy Director of Medical Reasearch
and Operations, NASA Manned Space
Craft Center
Houston, Texas



WALLACE RUBIN, M.D.
Associate Professor, Department of
Otoloryngology, Tulone University
School of Medicine
New Orleans, Louisiona

Scientific Program

Monday Morning, April 27, 1970

Room "C", Conference Center

Arlington Hotel

(enter through exhibit area)

J. P. Price, Jr., M.D., First Vice President, Presiding

8:30 A.M. Film: "The Technique of Intra-Articular and Peri-Articular Injection"

9:00 A.M. "Office Urology"
Robert K. Rhamy, M.D.

9:30 A.M. "Newer Trends in the Treatment of Human Infertility"
Charles B. Hammond, M.D.

10:00 A.M. "What Can Surgery Do for Acquired Heart Disease"
Grady L. Hallman, Jr., M.D.

10:30 A.M. INTERMISSION — Visit Exhibits

11:00 A.M. "Consideration of the Surgical Patient with Cardiovascular Disease"
M. Jerome Strong, M.D.

11:30 A.M. "Medical Support of Aerospace Flight"
Duane Catterson, M.D.

Monday Afternoon, April 27, 1970

Room "C", Conference Center

Joseph L. Rosenzweig, M.D., Second Vice President, Presiding

1:30 P.M. "A Surgeon's View of Arthritis"
Jack Stevens, M.D.

2:00 P.M. "The Problem of Hepatitis in a General Hospital"
William D. Davis, Jr., M.D.

2:30 P.M. INTERMISSION — Visit Exhibits

3:00 P.M. "Corneal Eye Banks"
Alson E. Braley, M.D.

3:30 P.M. "Granulomatous Ileocolitis"
John M. Dennis, M.D.

4:00 P.M. "Urinary Tract Infection"
Robert K. Rhamy, M.D.

Tuesday Morning, April 28, 1970

Room "C", Conference Center

A. C. Bradford, M.D., Third Vice President, Presiding

8:30 A.M. Film: "X-Ray, Ultrasound and Thermography in Diagnosis"

9:00 A.M. "Hyperthyroidism: Present Concents, Diagnosis and Management"
Delbert A. Fisher, M.D.

9:30 A.M. "The Management of Chronic Hepatitis"
William D. Davis, Jr., M.D.

10:00 A.M. "Evaluation of the Dizzy Patient"
Wallace Rubin, M.D.

10:30 A.M. INTERMISSION — Visit Exhibits

10:40 A.M. "The Immediate and Long Range Effects of the Certifying Board in Family Practice"
Edward J. Kowalewski, M.D.

Related Meetings

ASSOCIATION OF TUMOR CLINIC STAFF MEMBERS IN ARKANSAS

The Association of Tumor Clinic Staff Members in Arkansas will meet in the Mercury Room, Third Floor Tower Suite, of the Arlington Hotel on Monday, April 27, from 12:00 to 1:45 P.M. for a luncheon, scientific program and business session. Paul L. Mahoney, Jr., M.D., Associate Chairman, will preside.

SCIENTIFIC SESSION — CANCER SEMINAR

"Newer Concepts in Diagnosis and Treatment
of Malignant Trophoblastic Disease"

Guest Speaker: Charles B. Hammond, M.D.
Director, Southeastern Regional Center for Trophoblastic Neoplasms, Duke University
Assistant Professor, Obstetrics and Gynecology,
Duke University Medical Center
Director, Endocrine Division, Obstetrics and Gynecology,
Duke University Medical Center, Durham, North Carolina

Election of Officers — Announcement of ballot results

Acceptable for Category II or elective one hour credit by American Academy of General Practice.

INTERNAL MEDICINE

The Arkansas Component of the American Society of Internal Medicine will have a business meeting beginning at 10:30 A.M. on Tuesday, April 28, in the Arlington.

A luncheon meeting open to all physicians will begin at 12:00 Noon in the Arlington. Dr. Ross Fowler, President of the Arkansas Medical Society, will be the moderator for the following panel program:

SOME INFLUENCES ON THE SYSTEM OF MEDICAL PRACTICE

Panel Discussion

Participants:

Mr. Richard Norton

The Ozarka Regional Commission

"The Ozarka Regional Commission and Its Place on the Medical Scene."

Dr. Winston K. Shorey, Dean

University of Arkansas School of Medicine

"The Medical Center's Role in Present and Future Medical Practice."

Mr. Marvin Altman

Administrator, Sparks Memorial Hospital, Fort Smith, Arkansas
Director, Sparks Manor, Fort Smith, Arkansas
Regent, American College of Hospital Administrators
Board of Trustees, Arkansas Blue Cross-Blue Shield

"The Evolution of a Community Hospital with Views Toward a Regional Concept."

Mr. Ed Rensch

Director, Arkansas State Health Planning Program

"Comprehensive Health Planning — Its Past, Present, and Future."

Mr. Len Blaylock

Commissioner, Department of Public Welfare

"Title XIX in Arkansas (Arkansas Medicaid)."

PEDIATRICS

The Arkansas Chapter of the American Academy of Pediatrics will have a luncheon and business meeting on Tuesday, April 28, in the Arlington.

12:00 Noon - 2:00 P.M.	Luncheon and Bnsiness Meeting
2:00 P.M.	"Disorders of Carbohydrate Metabolism in the Newborn," Dr. Delbert A. Fisher, Professor of Pediatrics, University of California School of Medicine, Los Angeles
2:45 P.M.	"Lactose Intolerance," Dr. Sam Boellner, Assistant Professor of Pediatrics and Neurology, University of Arkansas Medical Center, Little Rock
3:15 - 3:30 P.M.	Coffee and Discussion
3:30 - 5:30 P.M.	Round Table — "Changing Patterns in Child Health Care" Dr. T. C. Panos, Professor and Chairman, Department of Pediatrics, University of Arkansas Medical Center, Moderator Dr. William G. Crook, Child Health Centers of America, Jackson, Tennessee Dr. Halcuit Moore, Alternate Chairman, District VII, American Academy of Pediatrics, Dallas, Texas Dr. Thomas E. Townsend, Pine Bluff, Arkansas

PATHOLOGY

The Arkansas Society of Pathologists will meet on Tuesday, April 28, in the Arlington. A luncheon beginning at 1:30 P.M. will be followed by a business meeting.

GENERAL PRACTICE

The Arkansas Academy of General Practice will meet for a scientific program from 2:00 P.M. to 4:00 P.M. on Tuesday, April 28, in the Arlington. Guest speaker will be Edward J. Kowalewski, M.D., President, American Academy of General Practice, Akron, Pennsylvania.

RADIOLOGY

The Arkansas Radiological Society will meet on Tuesday, April 28, in the Arlington. A luncheon beginning at 12:00 Noon will be followed by a business meeting and scientific program. The guest speaker will be John M. Dennis, M.D., Professor and Head of Department of Radiology, University of Maryland School of Medicine, Baltimore, Maryland. Dr. Dennis will speak on "Obstructive Lesions of the Lower Urinary Tract in Infants and Children."

E.E.N.T.

The Eye, Ear, Nose and Throat Section will meet all day Tuesday, April 28, in the Arlington Hotel, with the Eye Section in the morning and the ENT Section in the afternoon. There will be a joint business session during the noon meal.

EYE — 2 one-hour sessions on Corneal Diseases

J. Forrest Henry, M.D., Medical Director, Arkansas Eye Bank

Alson E. Braley, M.D., Professor Emeritus, Department of Ophthalmology, University of Iowa College of Medicine, Iowa City, Iowa

Mr. Max Woolly, Arkansas School of Blind

Noon Luncheon — Corneal Eye Banks

EAR — "Clinical Application of Electronystagmography"

Wallace Rubin, M.D., Associate Professor, Department of Otolaryngology, Tulane University School of Medicine, New Orleans, Louisiana

ORTHOPEDICS

The Orthopedic Section will meet for a luncheon beginning at 12:00 Noon on Tuesday, April 28, at the Hot Springs Rehabilitation Center. Dr. Jack Stevens, Professor of Orthopedics at the University of Chicago, will be guest speaker. Dr. Stevens will discuss "The Importance of Venous Thrombosis in Orthopedics." All interested physicians are invited to hear Dr. Stevens' talk.

UROLOGY

The Urology Section will meet at 12:15 P.M. on Tuesday, April 28, in the Arlington. A business session and scientific program will follow the luncheon. Dr. Robert K. Rhamy, Professor and Chairman, Division of Urology, Vanderbilt University School of Medicine, Nashville, Tennessee, will speak on "Present Rational for Treatment of Prostatic Carcinoma." A Pyelogram conference will conclude the meeting.

ANESTHESIOLOGY

The Anesthesiology Section will meet on Tuesday, April 28, in the Arlington for a scientific program. Guest speaker will be M. Jerome Strong, M.D., Associate Professor of Anesthesiology, Baylor College of Medicine, Houston, Texas. Dr. Strong will discuss "Clinical Consideration for Pediatric Anesthesia in Cardiac Surgery."

OBSTETRICS-GYNECOLOGY

A meeting of specialists in obstetrics and gynecology will be held at 2:00 P.M. on Tuesday, April 28, in the Arlington Hotel. Charles B. Hammond, M.D., Assistant Professor, Department of Obstetrics and Gynecology, Duke University Medical Center, Durham, North Carolina, will be the guest speaker. Dr. Hammond will speak on "Malignant and Trophoblastic Disease."

SURGERY

The Arkansas Chapter, American College of Surgeons will meet Tuesday, April 28, in the Arlington Hotel. Guest speaker will be Dr. Grady L. Hallman, Jr., Texas Heart Institute, Houston, Texas. Dr. Hallman will discuss "Salvage of Brains and Legs with Vascular Surgery."

Memorial Service

Joint Society-Auxiliary Service, Ballroom, Arlington Hotel

11:30 A.M., Tuesday, April 28

Presiding: Ross Fowler, M.D., President, Arkansas Medical Society

Reading of names of deceased members of the Society: Dr. Fowler

Reading of names of deceased members of the Auxiliary: Mrs. Carl Parkerson, President, Woman's Auxiliary to the Arkansas Medical Society

Memorial Address: G. Thomas Jansen, M.D., Little Rock

IN MEMORIAM

R. V. Bennett, M.D., Hot Springs
Morgan C. Berry, M.D., Malvern
E. J. Brown, M.D., Mansfield
Owen H. Clopton, M.D., Rector
Matthew C. Crandall, M.D., Wilmot
Joy Kenneth Donaldson, M.D., Little Rock
William E. Gray, M.D., Hot Springs
Edward C. Gresham, M.D., Crossett
Harvey J. Hall, M.D., Clinton
P. Leo Hathcock, M.D., Fayetteville
William C. Hays, Jr., M.D., Marianna
Jacob B. Hesterly, M.D., Prescott
Isaac R. Johnson, M.D., Blytheville
James M. Kolb, Sr., M.D., Clarksville
Virgle E. Lyons, M.D., North Little Rock
J. A. Martin, M.D., Lake City
Louie G. Martin, M.D., Hot Springs
Travis Mathews, M.D., Hazen
Samuel P. McConnell, M.D., Booneville
Ben D. Means, M.D., Little Rock
William H. Moreland, M.D., Tyronza
Ernest A. Purdum, M.D., Hot Springs
Howard A. Rands, M.D., Dumas
Phillip Gordon ReMine, M.D., Fort Smith
Euclid M. Smith, M.D., Hot Springs
John A. Thompson, M.D., Dermott
L. B. Tilley, M.D., Arkadelphia
Jesse T. Wood, M.D., Fountain Hill

House of Delegates Meeting

FIRST MEETING

1:00 P.M., Sunday, April 26, 1970

Room "C," Conference Center, Arlington Hotel

Amail Chudy, M.D., Speaker of the House of Delegates, Presiding

1. Call to Order
2. Roll Call of Delegates
3. Report of Credentials Committee
4. Introduction of Guests
5. Address by President of the Arkansas Medical Society, Ross Fowler, M.D., Harrison.
6. Adoption of minutes of the 93rd Annual Session, as published in the June 1969 issue of the Journal of the Arkansas Medical Society.
7. Adoption of minutes of the special session of the House held November 23, 1969, as published in the March 1970 issue of the Journal of the Arkansas Medical Society.
8. Report from Chairman of the Council, John Wood, M.D., on meetings held since publication of annual report of Council in March issue of Journal of the Arkansas Medical Society.
9. Reports of Committees
   Reports as published in March Journal may be amended by Committee Chairman. All reports will be referred to the Reference Committee.
10. New Business
    (Chapter XI, Section 2 of the Society Constitution pertaining to business of the House is as follows:

    All items expected to be considered at the Annual Meeting of the House of Delegates of this Society must be printed in the Journal of the Arkansas Medical Society in the month preceding the Annual Meeting. All resolutions to be submitted to the House of Delegates at the Annual Meeting must be received in the office of the Executive Vice President twenty days prior to said meeting. Any new business proposed during the first session of the House of Delegates of this Society must have a two-thirds majority of the attending delegates voting for such introduction into this Session. Any new resolutions or other new business proposed for introduction to this House of Delegates after the first session in each Annual Meeting must have two-thirds consent of attending delegates before its introduction.)
11. Announcement of Vacancies on State Boards
12. Selection of Nominating Committee
13. Adjournment

FINAL MEETING

10:00 A.M., Wednesday, April 29, 1970

Room "C," Conference Center

1. Call to Order
2. Report of Nominating Committee
3. Election of Officers:
   President-elect
   First Vice President
   Second Vice President
   Third Vice President
   Treasurer
   Secretary
   Speaker of the House of Delegates
   Vice Speaker of the House of Delegates
   Councilors (one from each of the ten councilor districts)
   Councilors whose terms expire are:
   1. Bascom P. Raney, M.D., Jonesboro
   2. Hugh R. Edwards, M.D., Searcy
   3. L. J. P. Bell, M.D., Helena
   4. Wayne Lazenby, M.D., Dumas
   5. George F. Wynne, M.D., Warren
   6. John P. Wood, M.D., Mena
   7. Robert F. McCrary, M.D., Hot Springs
   8. William S. Orr, Jr., M.D., Little Rock
   9. Henry V. Kirby, M.D., Harrison
   10. A. S. Koenig, M.D., Fort Smith

   Delegate to the American Medical Association House of Delegates (Term of C. C. Long, M.D., expires December 31, 1970)
   Alternate Delegate to the American Medical Association House of Delegates (Term of Joe Verser, M.D., expires December 31, 1970)
4. Election to fill vacancies on State Boards
5. Reports of Reference Committees
6. Supplemental Report of Councli
7. New Business
   Any new resolution or other new business proposed for introduction to this House of Delegates after the first session in each annual meeting must have two-thirds consent of attending delegates before its introduction.
8. Adjournment

REFERENCE COMMITTEES

Reference Committees appointed by the Speaker of the House of Delegates will hold open hearings to discuss the committee reports published in the March Journal, as well as any supplemental reports and resolutions referred to them during the first meeting of the House of Delegates on Sunday, April 26. All members are urged to participate in the discussion at the meetings. The committees will meet at 3:30 P.M. on Sunday, April 26, in the Arlington Hotel.

Members of the committees are:

Reference Committee No. 1:

Dr. Ross Maynard, Pine Bluff, Chairman
Dr. G. Thomas Jansen, Little Rock
Dr. C. Lynn Harris, Hope
Dr. Carl L. Williams, Fort Smith

Reference Committee No. 2:

Dr. Winston K. Shorey, Little Rock, Chairman
Dr. John Trieschmann, Hot Springs
Dr. John H. Delamore, Fordyce
Dr. James K. Patrick, Fayetteville

Reference Committee No. 3:

Dr. William S. Orr, Jr., Little Rock, Chairman
Dr. Jim E. Lytle, Batesville
Dr. Guy U. Robinson, Dumas
Dr. Jacob P. Ellis, El Dorado

STATE BOARD VACANCIES

Arkansas State Medical Board

A vacancy occurs in the Fifth Congressional District, the counties of which are listed below. Members from these counties are urged to meet in the Arlington Hotel immediately following adjournment of the House of Delegates meeting on Sunday, April 26, to vote for nominees. Nominations should be reported to the covention registration desk.

Counties in District: Conway, Faulkner, Perry, Pope, Pulaski, and Yell.

Present Member: William A. Snodgrass, Jr., Little Rock, term expires December 31, 1970, eligible for re-appointment.

Arkansas State Board of Health

Vacancies occur in the Second and Fourth Congressional Districts, the counties of which are listed below. Members from these counties are urged to meet in Room "C" of the Conference Center, Arlington Hotel, immediately following adjournment of the House of Delegates meeting on Sunday, April 26, to vote for nominees. Nominations should be reported to the convention registration desk. There must be three nominees for each vacancy.

Second District — Counties in District: Cleburne, Fulton, Independence, Izard, Jackson, Lawrence, Monroe, Prairie, Randolph, Sharp, Stone, White, and Woodruff.

Present Member: Ed D. McKnight, M.D., Brinkley, term expires December 31, 1970, eligible for re-appointment.

Fourth District — Counties in District: Ashley, Bradley, Calhoun, Clark, Columbia, Hempstead, Howard, Lafayette, Little River, Miller, Montgomery, Nevada, Ouachita, Pike, Polk, Sevier, and Union.

Present Member: Warren S. Riley, M.D., El Dorado, term expires December 31, 1970, eligible for re-appointment.

Scientific Exhibits

The scientific exhibits will be located in the mezzanine lobby area and the area of the Conference Center adjacent to the technical exhibits. All members are urged to visit the exhibits as they are an integral part of the scientific program.

The following exhibits will be on display:

Dowling B. Stough, M.D.
"Selected Reconstructive Procedures of the Scalp and Face"

Miss Neil Kelly, Librarian—U. of A. Medical Center

John E. Allen, M.D.
"Vascular Surgery for Arteriosclerosis"

W. Duane Jones, M.D.
"Bacteriology of the Myco Bacterial Groups"

Ellergy C. Gay, M.D.
"Radical Resection of the Maxilla with Orbital Ethmoid Exenteration"

Morriss M. Henry, M.D.

Dale Alford, M.D.

Wilma C. Diner, M.D. & Eloise B. Sherman, M.D.
"Mammography: Radiographic and Pathological Correlation"

John W. Joyce, M.D.
"Angiographic Magnification Technique"

C. Allen McKnight, M.D.
"Urethral Suspension Using Staples"

Richard B. Clark, M.D.
"Chemical Resuscitation of the Newborn"

Kenneth G. Jones, M.D.
"Fractures General Practitioners Should Enjoy Treating"

Stevenson Flanigan, M.D.
"Abnormal Movement Disorders"

Howard J. Barnhard, M.D. & Doyne Dodd, M.D.
"A Unique Radiographic Demonstration of Lumbar Vetrebral Anatomy"

R. Barry Sorrells, M.D.

G. Allen Robinson, M.D.
"Physical Basis for Radiation Therapy"

W. Sexton Lewis, M.D.

Jim Hollander, Physical Therapy, Arthritis Foundation

Carl L. Williams, M. D.

James J. Pappas, M.D. & Michael E. Winston, M.A.
"Modern Otology—Team Approach"

Harry Hayes, Jr., M.D.
"Resurfacing the Hand"

Gilbert Campbell, M.D.
"Heart Surgery at the University of Arkansas Medical Center"

Technical Exhibits

E. R. SQUIBB AND SONS

Members of the medical profession who search for better agents to prevent and treat disease are eager to learn of new products and improvements in products. Since therapeutic advances are constantly being introduced to the professional market, much valuable product information is available. Your inquiries about the latest results of our research will be welcomed.

SANDOZ PHARMACEUTICALS

Sandoz Pharmaceuticals cordially invites you to visit our display at booth No. 2, where we are featuring MELLARIL, HYDERGINE, SANSERT, CAFERGOT P-B, FIORINAL and BELLERGAL. Any of our representatives in attendance will gladly answer questions about these and other Sandoz products.

PARKE-DAVIS AND COMPANY

Parke-Davis is proud of more than a century of service

to the medical profession. Our representatives consider it a pleasure to contribute to the success of your meeting. They will be present to discuss the quality products from Parke-Davis, and welcome your comments or inquiry.

THE WILLIAM S. MERRELL COMPANY

Merrellmen always have an up-to-date status report on Merrell's significant prescription products. They will be happy to convey latest clinical reports to you in summary form when you visit the Merrell booth.

RATHER, BEYER AND HARPER

Representatives of Rather, Beyer and Harper will have brochures and all information on the Arkansas Medical Society group plans of insurance — specifically the Income Protection Plan, the Office Overhead Expense Plan and the new Million Dollar Professional Liability Policy. Records will be available so that each doctor may review the insurance coverages which he has under the group plans of the Arkansas Medical Society.

ELI LILLY AND COMPANY

You are cordially invited to visit the Lilly exhibit. Our sales representatives in attendance will welcome your questions about our pharmaceutical products.

G. D. SEARLE AND COMPANY

You are cordially invited to visit the SEARLE booth where our representatives will be happy to answer any questions regarding Searle Products of Research. Featured will be information on OVULEN-21, OVULEN-28, ENOVID, ALDACTAZIDE, FLAGYL, LOMOTIL, PROBANTHINE and other drugs of interest.

WARNER-CHILCOTT LABORATORIES

Your Warner-Chilcott Representatives cordially invite the members of the Arkansas Medical Society to see and discuss what's new at Warner-Chilcott Booth No. 8.

A. H. ROBINS COMPANY

You are cordially invited to visit the A. H. Robins display and meet our representatives who will welcome the opportunity to discuss products of interest with you. Our most recent new product release is DIMACOL - TM (pseudoephedrine, pheniramine, dextromethorphan and glyceryl guaiacolate).

ARKANSAS BLUE CROSS AND BLUE SHIELD, INC.

Our booth is for your convenience and we welcome your visit. Blue Cross - Blue Shield's representatives are always ready to help solve any case problem or answer your questions. The medical profession has been largely responsible for our growth in membership which now totals over 400,000 — an achievement of which we should all be proud.

ASTRA PHARMACEUTICAL PRODUCTS, INC.

Information and descriptive literature pertaining to Xylocaine(R) (lidocaine) and Citanest(R) (prilocaine) local and topical anesthetics, and Jectofer (R) (iron sorbitex) iron preparation for intramuscular administration will be available at the Astra booth.

THE MEDIFAC COMPANY

The Medifac Company invites members of the Society to visit their booth and view their display of medical equipment.

WILLIAM T. STOVER, INC.

The William T. Stover Company, Inc., Little Rock, will have a booth staffed with informed and qualified representatives — eager to welcome you and assist in any manner possible — as well as to show you the up-to-date developments in the medical and surgical industry.

DABBS SULLIVAN, TRULOCK AND COMPANY, INC.

Dabbs Sullivan, Trulock and Company, Inc., will be represented by Melvin Spear who will be happy to answer your questions on securities and assist you in establishing a sound investment program. Brochures will be available.

THE EMKO COMPANY

THE EMKO COMPANY exhibits the first aerosol foam contraceptive. EMKO VAGINAL CONTRACEPTIVE FOAM has been professionally recommended for over eight years. It has a high level of effectiveness and is substantially free from side efects. Women appreciate its asthetic qualities. Literature and samples of EMKO VAGINAL CONTRACEPTIVE FOAM and MY OWN HYGIENIC DEODORANT SPRAY and TOWELETTES available at the EMKO COMPANY exhibit.

BRISTOL LABORATORIES

A cordial invitation is issued to all members of the Society to visit the Bristol booth and discuss products of Bristol research with representatives in attendance.

SCHERING LABORATORIES

SCHERING LABORATORIES' representatives invite you to visit Booth Space No. 17 where questions on ETRAFON(R), DRIXORAL(R), VALISONE(R) or any other Schering products will be answered.

SMITH, KLINE AND FRENCH LABORATORIES

Representatives will be on hand to answer your specific questions and provide information on their products and services.

ABBOTT LABORATORIES

You are cordially invited to visit the Abbott exhibit which will feature important pharmaceutical products and new innovations in I. V. solutions and equipment.

WILLIAM P. POYTHRESS AND COMPANY, INC.

You are cordially invited to visit the exhibit of William P. Poythress and Company, Inc., manufacturers of ethical pharmaceuticals since 1856, and discuss our line of established products.

Our medical representative will be available to supply you with literature, samples and technical information on ANTROCOL, BENSULFOID LOTION, MERPECTOGEL, the MUDRANE COMBINATIONS, PANALGESIC, SOLFO-SERPINE, SOLFOTON, SYNIRIN, T C S, TROCINATE and URO-PHOSPHATE.

ORTHO PHARMACEUTICAL CORPORATION

Welcome to Booth 21 where ORTHO is proud to present the most complete line of medically accepted products for the control of conception. Of special note are the most recent products of the Ortho Research Foundation — ORTHO-NOVUM* 1mg tablets, ORTHO-NOVUM 2mg tablets, ORTHO-NOVUM SQ* tablets, ORTHO-NOVUM 1/80* □ 21 tablets, DELFEN* Contraceptive Cream and DELFEN Contraceptive Foam. Also on display will be our well-known products for the treatment of various forms of vaginitis. Your questions will be welcomed by our representatives.

MEDICARENTS, INC.

Rental Program for Stryker Flotation Pad and PolyVent Leveling Mattress used in the prevention and treatment of decubitus ulcers.

KAY SURGICAL, INC.

All members of the Society are invited to visit the Kay Surgical booth. General medical supplies and instruments will be on display and representatives will be present to discuss those products and answer inquiries of physicians.

THE STUART COMPANY

A cordial invitation is extended to all members and guests attending this meeting to visit the Stuart Pharmaceuticals booth. Trained representatives will be in attendance to answer your questions on our products: DIALOSE(R), DIALOSE(R) PLUS, MULVIDREN(R), MULVIDREN(R)-F, MYLANTA(R), MYLICON(R), STUART PRENATAL(R), STUART PRENATAL(R) w/Folic Acid, and SORBITRATE(R).

WINTHROP LABORATORIES

Winthrop Laboratories cordially invites you to visit booth No. 25, where we will feature: Talwin Oral, brand of Pentazocine (as hydrochloride), Sulfamylon, brand of mafenide (as acetate), Isuprel Mistometer, brand of isoproterenol, NegGram, brand of nalidixic acid.

SMITH, MILLER AND PATCH, INC.

Smith, Miller and Patch, Inc., will feature our new nonbarbiturate hypnotic, SOMNAFAC & SOMNAFAC FOURTE; DECONAMINE, a potent oral antihistamine and decongestant in *three* dosage forms; PYOCIDIN HC OTIC SOLUTION; VASOCIDIN OPHTHALMIC-OTIC SOLUTION; our hematinics, VITRON-C & VITRON-C PLUS; and our specialty bowel regulator, KONDREMUL.

AUTOMATED MANAGEMENT SYSTEMS

"It's no use filling your pocket with money if you have got a hole in the corner." George Eliot

Doctors serve their patients well. In return, most patients pay their bill. Some on time — others not. That is where the hole in the corner of your pocket develops. The HOLE is not having the TIME or SYSTEM to properly administer the business end of your practice. Possibly too much time is spent on routine clerical tasks — preparing statements, posting ledger cards and daybooks. In spite of this you still are not generating meaningful management information.

PATCH THAT HOLE with our A.M.S. accounts receivable management system. Your office will be more efficient and will have time for the important jobs. Merely send us daily vouchers on each patient served. We'll do the rest. Your office will operate efficiently and smoothly — increasing collections. You will receive monthly management reports that provide you with an in-depth analysis of your practice, plus weekly updated reports on patient accounts. Yes, we take care of the billing, too.

CUMMINGS X-RAY COMPANY

We will be featuring in our booth: New ECG Heart Sound Adapter — Allows physician to record heart sounds on his own electrocardiograph — Permits PCG and ECG on same tracing. New Telemetry system transmits and receives electrocardiograms via any standard telephone of communications-quality radio link.

WILLIAM H. RORER, INC.

William H. Rorer, Inc., takes pride in exhibiting its fine pharmaceutical products at this convention. Our representatives will gladly discuss MAALOX, ASCRIPTIN, ANANASE, QUAALUDE and our other products with you.

AYERST LABORATORIES

Ayerst Laboratories extends an invitation to visit our exhibit. Our representatives will be pleased to discuss Ayerst products with you.

THE UPJOHN COMPANY

Professional representatives of The Upjohn Company are eager to contribute to the success of your meeting. They are here to discuss products of Upjohn research designed to assist you in the practice of your profession. They welcome your inquiries and comments.

CIBA PHARMACEUTICAL COMPANY

CIBA Pharmaceutical Company, Summit, New Jersey. CIBA Professional Service Representatives will be pleased to discuss Ser-Ap-Es.

FLOYD WEHRENBERG AND ASSOCIATES

All of you are familiar with Medical Economics and Physician's Management and have read many articles written by and about Management Consultants. For the second year, a management consulting firm is having a booth at the Arkansas State Medical Convention and there will be representatives from the company there to visit with the doctors and explain how they may be of service to you in the practice of medicine as well as in your own personal financial planning for the future.

The company has been practicing professional management since 1949 and are therefore quite experienced in this field. It is their desire to make available to you trained Management Consultants and therefore are taking the approach of attending your meeting and supporting your meeting with the hope that the doctors will in turn be interested enough in having this type of service available in the state of Arkansas to come by the booth and say "hello". Mr. Wehrenberg is interested enough in the state

of Arkansas that he plans to attend this meeting himself, and he also plans to have Mr. Charles Krebs, vice president and manager of the Memphis branch available at the booth to visit with all of you who will take the time to come by.

HERBERT COX CORRECT SHOES

Herbert Cox Correct Shoes, Inc., now one location only: Park Plaza Shopping Center, Little Rock, Arkansas 72205. Exhibiting shoes as tools to the medical profession. Shoes for children and adults, useful to the orthopedist, pediatrician, internist, general practitioner and others. Arkansas' oldest and most complete retailer of orthopedic merchandise.

INVESTMENT RETIREMENT TRUST

Information will be available for distribution in regard to the Memphis and Shelby County Medical Society's Investment Retirement Trust and its use in conjunction with your investment portfolio, with your Keogh plan and with your Professional Corporation. I.R.T. Plan Advisors will be present at all sessions for consultation. (I.R.T. was adopted as the official retirement plan by the Tennessee Medical Association in 1965.)

MEAD JOHNSON LABORATORIES

The Mead Johnson Laboratories' exhibit has been arranged to give you the optimum in quick service and product information. To make your visit productive, specially trained representatives will be on duty to tell you about VASODILAN-20, ENFAMIL, and NATALINS Rx.

MERCK, SHARP, AND DOHME

The Merck, Sharp, and Dohme exhibit has been designed to offer a contribution to your therapeutic armamentarium. Technically trained personnel are available to discuss the scope and variety of services offered to physicians.

MOUNTAIN VALLEY MINERAL WATER COMPANY

MOUNTAIN VALLEY WATER from Hot Springs, Arkansas. Pleasant tasting, low sodium (2.8 p.p.m.), mildly alkaline (pH. 7.6), hard water. The only natural water distributed nationally, will mark its 100th anniversary in 1971.

Annual Committee Reports

Committee on Public Health (Rural Health)

Ben N. Saltzman, M.D., Chairman

The Committee on Public Health (Rural Health) has been active this year in promoting the Emergency Health Services program for the State of Arkansas. The chairman, a past chairman and member of the Committee on Rural Health of the American Medical Association, has attempted to carry out some of the programs emphasized by the council. Members of the committee helped formulate and implement the Emergency Health Services Conference held in Little Rock on August 22, 1969. The chairman was the keynote speaker and served as a resource person for the conference. Several talks were given over the state on Emergency Health Services.

As a member of the Committee on Rural Health, the chairman testified at a site visit for the Regional Medical program in Little Rock.

The chairman served as a judge and presented health awards on behalf of the Arkansas Medical Society to winners of the State 4-H Congress in Little Rock on July 25, 1969.

On September 5, 1969 the chairman talked on "Models For The Delivery of Rural Health Services" to a meeting of the American Medical Association's Council on Rural Health and its advisory committee.

On September 15, 1969 the chairman spoke to the Congress on Occupational Health on "Medical Aspects of Rural Occupational Health."

On September 20, 1969 the chairman spoke to the District 6 Regional Conference of the American Academy of Pediatrics on "Models for the Provision of Health Care in Rural Areas."

On October 8, 1969 the chairman spoke to the Tennessee Rural Health Conference in Johnson City, Tennessee on "Models for the Delivery of Rural Health Services."

On November 23, 1969 a meeting of the Committee on Public Health was held in conjunction with the winter meeting of the Arkansas Medical Society. At this meeting the objectives of the Council on Rural Health were discussed and planning was begun for the implementation of those other than the ones outlined in the Emergency Medical Services Plan. It is hoped that the committee will play a part in helping meet the rural health manpower shortage and will provide further information for establishing better health services in the rural areas.

The American Medical Association's pamphlet on "Delivery of Health Services in Rural Areas —

Selected Models" has been distributed to all members of the committee. The present members include: Drs. Edgar Easley, John P. Bethell, Jr., Wayne Lazenby, C. A. Archer, Jr., Vestal B. Smith, Omer E. Bradsher and the chairman.

The chairman leaves the council on Rural Health of the American Medical Association after having served ten full years. In his capacity as a member and Chairman of the Council he has had the unique opportunity of putting into practice the outcome of the thinking of some of the best minds in American medicine and American rural leadership. It is his intention to continue to serve the people of Arkansas, both in rural health and in public health matters as long as he is given the opportunity.

This has been a rewarding year for the chairman and he hopes for the members of the committee.

Sub-Committee on Liaison with the State Board of Health

Purcell Smith, Jr., M.D., Chairman

A meeting of the Sub-Committee on Liaison with the State Board of Health was called for November 23rd in connection with the Society's winter meeting. The committee chairman was unable to attend the meeting because of illness.

A member of the committee did meet with the State Health Officer. The State Health Officer discussed the low pay scale of physicians employed by the State Health Department and the possibility that the Council might instruct the Legislative Committee to work to elevate the pay scale.

Sub-Committee on Physical Fitness and School Health

Robert Langston, M.D., Chairman

The Sub-Committee on School Health and Physical Fitness met during the annual winter meeting of the Arkansas Medical Society with the following members in attendance: Francis M. Henderson, M.D., Jack W. Kennedy, M.D., R. H. Langston, M.D.

The past and future activities of the committee include:

(1) Report on the Twelfth National Conference of Physicians and Schools by the chairman.

(2) Discussion of the first Red-White Symposium on Athletic Injuries at the University of Arkansas in Fayetteville with planning for the second annual Red-White Symposium to take place at the time of the Red-White football game in Little Rock this spring of 1970.

(3) A suggestion to enlarge the committee to allow division into Health Education and Physical Fitness and Athletics. This division would be by activity only, and the committee would remain as one. (Two additional members.)

(4) Planning for a second Arkansas School Health Conference to take place in the spring of 1970 in association with the State Department of Education and those members from Arkansas who attended the National Conference on Physicians and Schools in Chicago.

(5) Recommendation to the Arkansas Athletic Association of a minimum physical examination for participation in athletics with a member of the Medical Society speaking to the coaches at the coaches clinic in August 1970.

(6) The committee also discussed the possibility of the State Medical Society Scientific Meeting in April 1971 be in the area of physical fitness and school health.

(7) The establishment of a newsletter on sports medicine for the state of Arkansas with contributors from team physicians over the state.

Sub-Committee on Mental Health

William O. Young, M.D., Chairman

The Mental Health Committee of the Arkansas Medical Society met on the morning of November 23, 1969, at the Marion Hotel in Little Rock in conjunction with the winter meeting of the Arkansas Medical Society. Present were Drs. Reese, Whitehead, Kolb and Young. Dr. Robert Shannon of Little Rock, Dr. Milton Bessire of Conway, and Mr. Charles Acuff, the Acting Commissioner of Mental Retardation from Conway, were present at the Committee's request. The following items were discussed:

1. The possibility of involving the Children's Colony in the residents training program for psychiatry and pediatrics. Mr. Acuff was quite willing to participate in this in whatever way

might be effective. It was pointed out that Dr. Bessire, who will be the Medical Director of the Department of Mental Retardation starting January 1, is spending one afternoon a week teaching in the Pediatric Clinic. He has had a good deal of experience in various training programs and talked about various ways that he and an assistant could help in this program.

2. This was a discussion of several items in the proposed Constitution for the State of Arkansas as was published by the Arkansas Democrat on October 5, 1969. Members of the Committee felt that there were several items in this proposed Constitution that should be changed. In Article 3, Section 3, it says, "The population of each district for the purpose of representation shall not include inmates of prisons, hospitals for the insane, or similar instituitons." We suggest that it be changed to say "shall not include inmates of prisons, hospitals, or similar institutions. This would strike out the words "for the insane." Under Article 4, Section 12B, it states, "The Game and Fish Commission and the Highway Commission shall not be effected by this section." We suggest that they consider including this same statement for the Department of Mental Health and the Department of Retardation. Under Article 8, Section 7, it says, "The General Assembly shall provide for the support of public institutions for the treatment of the mentally ill and the handicapped." We suggest that it be changed to "The General Assembly shall provide for the support of the public institutions for education and rehabilitation not excluding the mentally ill and the handicapped." Under Article 9, Section 2, it says, "The General Assembly shall designate felonies and mental deficiencies which disqualify persons from voting and conditions under which the franchise may be restored." We suggest that this be changed to "The General Assembly shall designate conditions which shall call people to be declared legally incompetent to disqualify them from voting and the condition under which the franchise may be restored."

3. There was a discussion of a committee which will be appointed by the Arkansas Medical Society to meet with the Legislative Council in December on laws governing drugs. We had planned to discuss this independently since we were not aware that the Medical Society had planned to appoint such a committee until a few days ago. Since they are already taking this action we felt that there was no point in our Commitee making any suggestions along this line.

4. There was a discussion of the acute shortage of psychiatric help in the various colleges in the State. This is related to the problem of the use of dangerous drugs. So far as we know there is a psychiatrist working half time at the University of Arkansas and none at any of the other institutions. They do receive some counselling from the psychology department but these men are primarily academically trained psychologists rather than clinical psychologists. It was suggested that one way of improving this would be to suggest that the colleges have a group health insurance program for their students which would enable them to consult private psychiatrists if this were necessary.

5. It was suggested that the Society recommend that family health insurance policies be changed to cover dependents as defined by the United States Internal Revenue Service rather than automatically cutting these dependents off at age 18. This would then make the family insurance policies cover students who are still in college and who are dependent on their parents as well as older people who are dependent on their family for support. We also felt that the Society should strongly recommend that health and accident insurance should not discriminate against mental illness, alcoholism or drug addiction as far as the benefits that they pay.

6. The Committee discussed the very acute problem of obtaining psychiatric help for adolescents and children who are mentally ill. The Child Study Center, which has recently opened on the grounds of the University of Arkansas Medical Center, was built with Federal funds but needs State funds for its operation. Funds will be requested from the Special Session of the General Assembly for funds for operation of the Child Study Center. We feel that the Arkansas Medical Society should support this request. The Child Study Center is established for the evaluation and treatment of children between the ages of six and twelve. There are approximately fifteen beds for short inpatient treatment of children within these ages but it will be necessary to have funds available to equip and operate this area. We learned that there is an evaluation center for young adults

and adolescents at the Benton Unit of the Arkansas State Hospital which started operation November 3, 1969. We feel that this is a move on the part of the State Hospital System to help meet the need of the young mentally ill. It was suggested that small hospital treatment unit for mentally ill adolescents could be estbalished by cooperation between the State Hospital and the University of Arkansas Medical Center if the State Hospital is able to provide some beds with the majority of the treatment being conducted by the staff of the psychiatric department at the University of Arkansas Medical School. Members of the Committee felt that there had been some improvement in the relationship between several State Institutions in attempting to deal with this situation.

7. This is related to the problem in item No. 6. It was proposed that someone using the anthority of the Governor's Office establish a committee with individuals representing the State Hospital, the Children's Colony, the training schools, the Blind School, the Deaf School, Rehabilitation Service, Special Education, the Medical Center, the Arkansas State Health Department, and possibly other agencies to meet at least monthly to discuss problems which arise concerning two or more of the above institutions. We felt that the members of this committee should be representative of their institution with authority to make decisions, and that this group should be primarily concerned about citizens of Arkansas who require the services of two or more of the institutions. This group could expedite transfer of patients from one institution to another or the use of staff and services of one institution in treating a patient who is in another institution. This could be called a Committee on Conservation of Human Resources and should be responsible directly to the Governor.

8. Mr. Acuff reported that at the last session of the Legislature a bill was passed which authorized the Children's Colony to set up a small unit of from twenty to forty beds to treat retarded children who are mentally ill, or to treat the functionally retarded which would mean children who are retarded because of their mental illness. This might very well work if there were funds appropriated for this. However, no funds were appropriated by the last Legislature and we urge the Society to urge the Legislature to consider funds for this program or for some similar program.

9. The Committee felt that they should strongly recommend to the Committee on Continuing Education of the Arkansas Medical Society that they plan programs in (one) educating the members of the Society concerning various aspects of mental retardation and way that they may help these patients get the proper care and treatment and (two) that they plan a program either for hospital staffs or Medical Societies in which staff members from the School of Medicine and the School of Pharmacy at the University of Arkansas Medical Center could give the members of the Society more specific information about the various dangerous drugs which are causing so much concern. This would include drugs like LSD, Marijuana, Amphetamines, and perhaps some of the lesser known narcotics. We feel that the members of the Arkansas Medical Society could function much more effectively in their communities if they had more information and understanding of these situations.

10. We feel that the Arkansas Medical Society should express appreciation to the Auxiliary of the State Medical Society and the Auxiliary of the American Medical Association for the contributions that they have made through the Esther Long Memorial Fund which was used to furnish the auditorium at the Child Study Center. These organizations made a very appreciable contribution to the Child Study Center.

Sub-Committee on Immunization

Wilbur G. Lawson, M.D., Chairman

Two members of the Immunization Sub-Committee participated in the annual meeting of the Arkansas Chapter of the American Academy of Pediatrics at Hot Springs, April 19, 1969, at which time the immunization schedule previously published was reviewed, and revisions planned. It is anticipated that the placards for general office use will be revised and reissued in the coming years with additions of policy statements on Mumps and Rubella virus vaccine.

Efforts at amending the State immunization law to correct certain inefficiencies of the original act failed to pass legislative approval due to refusal by school administrators to support the re-

visions. With the development of a commercially available source of Rubella virus vaccine a rational approach to the utilization of this material was begun. After reviewing our sources of literature and sampling the clinical experiences of those personally in contact with members of the committee, a telephone conference of the committee was arranged through the executive office of the State Society, and was conducted December 12, 1969. The committee's thoughts were expressed in a letter to the president as follows.

1. This is probably an excellent vaccine that promises great results with few problems in the future.

2. At this time the members cannot endorse a mass clinic promotion for an antigen that has not stood the trial of considered, controlled use in private and public clinics for a span of time encompassing repeated gestational exposures of non-immune gravid females.

3. Medical and lay literature offered by respected authorities still fail to award full sanction and safety to the potential ramification of this vaccine.

4. The committee does support the promotion of the administration of Rubella vaccine by private and public health offices to all those within the one through six year age category. Older children to be vaccinated at personal discretion till an age of fertile adolescence. Women candidates in the child-bearing age will be carefully selected and briefed using the criteria promulgated by the American Academy of Pediatrics and the American Academy of Obstetrics and Gynecology.

Continued review of the procedures in smallpox immunization is still under way and communications with the World Health Organization is being maintained. There is prospect in sight that the research program and immunization program for smallpox in Africanas now conducted by the chief of the smallpox eradication unit, will enable us to promote the earlier immunization time for smallpox vaccination, as the Chairman of this committee has wished for many years. Experiences in their immunization program from birth on, in all villages, have so far borne out this principle, although they are not ready to be cited specifically in literature.

Sub-Committee on Traffic Safety

J. Warren Murry, M.D., Chairman

The following is a report of the meeting and activities of the Sub-Committee on Traffic Safety of the Arkansas Medical Society.

The Sub-Committee on Traffic Safety met in Little Rock during the winter meeting of the Arkansas Medical Society with following members present: Drs. Murry, Turney, Stuckey, Hammon, and Jouett. The following guests were present: State Representative Dr. Morriss Henry; Mr. J. T. Jaynes, Director, Division of Safety, Arkansas State Health Dept.; Major DeLong, Arkansas State Police.

A number of items of interest to the committee were discussed at length, including the following: (1) Driver education in the high schools. It was felt that this should be the number one project for this sub-committee for the coming year to work with the Arkansas State Police and to work through the Legislature wtih Dr. Henry and to work with the school systems and other interested groups in order to promote and expand the program of driver education.

(2) Driver's licensing. The committee stressed the need for the establishment of some type of periodic re-examination or medical certification for driver's licensing. Dr. Henry was asked to contact appropriate state authorities in an attempt to see that those people who are classified as legally blind and are receiving assistance should be disqualified as legal licensed drivers in the State of Arkansas. It was the feeling of the committee that in the future a State Society should work toward some method of medical certification for driver's licensing.

(3) The problem of ambulance service in the State of Arkansas was discussed at some length and it was felt by the committee that there is a need in Arkansas for some standard code or model ordinance for operation of ambulances. The City Ordinance in Little Rock pertaining to operation of ambulances was again mentioned and described and particularly in relation to the control of the speed of ambulances and in relationship to the obeying of traffic rules and regulations. The problem of training ambulance attendants was also discussed and Mr. Jaynes of the State Health Dept. discussed some of the provisions of

a Highway Safety Act of 1966 and also presented to the committee a brief summary of a recent course which was presented in Jefferson County with the assistance of the Jefferson County Medical Society entitled "Emergency Care and the Transportation of the Sick and Injured" which was presented for the benefit of ambulance attendants, firemen, policemen, nurses, and other paramedical people interested and concerned about emergency care. Mr. Jaynes has been kind enough to send me, for my inspection, a copy of the outline of the program which was presented in Jefferson County and has also sent me a copy of some of the provisions of the Highway Safety Act pertaining to facilities and care for people involved in highway accidents.

(4) A discussion was held concerning the Implied Consent Law which was introduced by Representative Morriss Henry of Fayetteville, and was passed in the last session of the Legislature. It was felt that in order for this law to be more fully implemented and to be of aid to investigating officers in automobile accidents where the question of alcohol is involved that a clarification of this new law will be necessary. It was also felt that more public information concerning the new law should be distributed around the State. Major Delong of the State Police Department was asked to comment concerning these various matters which were discussed by the committee that were of particular interest to him. He expressed particular interest in the Driver Education Program and urged the committee to work toward expanding this program throughout the State.

Committee on Medical Education

Lee B. Parker, M.D., Chairman

The committee would like to report on two items of major importance in the area of medical education in Arkansas.

I. The postgraduate education program developed at the University Medical Center has been approved by the Regional Medical Programs (Heart, Cancer, Stroke) in Washington, D. C., but has not been funded as of this report time (December 1969). When Congress acts on the appropriations bill, funds should become available. However, it is expected that only about 20% of the requested funds will be made available. It is obvious that the planned program could not be fully implemented with these funds. The Medical Center plans, and this committee agrees, to proceed with the establishment of the full program as originally planned but limit its implementation to only one councilor district. This will serve as a pilot project. As experience is gained and funds become available, the program would then be taken into other districts.

At the midwinter session in November, 1969, the committee reported this situation to the Council and received permission to counsel with the Medical Center in the selection of the district priorities for this program. It is hoped that by the time of the 1970 session, this report can be updated to include further information.

II. The committee would like to have the Society take note of the Family Practice Residency program being established by our School of Medicine.

Application to the AMA Council on Residencies for approval of the Arkansas residency program has been made. An inspection was carried out in November 1969 and the council will act on the request in early December.

If approval is forthcoming as expected, the Arkansas program should be able to begin training its first residents in July 1970.

The committee wishes to point out the tremendous amount of work expended by the head of the Family Practice Department, Dr. John Tudor, in the establishment of this program. It is worthwhile to note also the extensive liaison and cooperative effort expended between the school, many interested doctors and medical groups and of the three involved Little Rock hospitals. This should serve to remind us all that cooperation is possible and can improve the training of physicians and thus the improvement of health services to the people.

As we understand it, the clinic offices will be located adjacent to St. Vincent; hospital bed facilities will be available at both St. Vincent and Baptist Hospitals; and emergency room facilities at the University will be used.

III. A third item to be reported is that the University in January and February 1970 will have presented an extensive refresher training

course especially for those doctors desiring to take the examination for the National Board of Family Practice. The course was open to any other doctor desiring to attend.

Sub-Committee on Liaison with Vocational Rehabilitation

Paul G. Henley, M.D., Chairman

The Sub-Committee on Liaison with Vocational Rehabilitation met at the Marion Hotel, Little Rock, Arkansas, on November 23, 1969, in connection with the Annual Winter Meeting of the Arkansas Medical Society. The members of the Committee present were Doctor Paul G. Henley, Chairman, Doctors R. H. Atkinson, P. J. Deer, Rhys A. Williams and John Wood. Mr. Russell Baxter, Director of the Arkansas Rehabilitation Service; Mr. L. H. Autry, Director of the Arkansas Rehabilitation Service for the Blind; and Mr. Young M. Orsburn of the Arkansas Rehabilitation Service were also present.

Mr. Baxter reported that the relationship of the Arkansas Medical Society and the Arkansas Rehabilitation Service had been most satisfactory. After two years of operating under the usual and customary fee system, there have been no significant abuses. Mr. Baxter further commented that in comparison with the fees submitted and the fee schedule based on the California Relative Value Scale revealed that the Arkansas fees were well within the California limits. In a general discussion of the usual and customary fees of the Arkansas Rehabilitation Service, it was noted that this was in marked contrast with the Blue Cross-Blue Shield System of usual and customary fees — the contrast being that Blue Cross-Blue Shield was not representative of the State in general in that Blue Cross-Blue Shield divides the State into regions or districts with different fee schedules as applied to Medicare fees. No comparison of the fee schedule could be made due to the lack of data. The consensus of the Committee was that the usual and customary fee schedule of the Rehabilitation Service was more reasonable for the entire State than the multiple divisions of the Blue Cross-Blue Shield system.

The Committee then discussed fees as related to "exploratory laparotomies." It recommended to the Arkansas Rehabilitation Service that if it could be adopted, that the fee for an "exploratory laparotomy" be deferred until a definitive procedure had been accomplished.

A general discussion for qualifications for surgical participation privileges with the Rehabilitation Service was then held. No changes were recommended. Another subject for discussion concerned the possibility of the adoption of the fee schedule for surgical assistants for rehabilitation cases. This subject was introduced by a member of the Committee. It was thoroughly discussed, and Mr. Baxter stated that after January 1, 1970 the Service may be able to offer some method of paying the assistant fee in certain specific cases. NO fee schedule can be devised at this time as no funds are available. It is the recommendation of the Sub-Committee that as soon as feasible a study be made and an assistant fee schedule be adopted.

Mr. Baxter further reported that due to the resignation of medical personnel at the Hot Springs facility there would be some delay in the treating of certain types of rehabilitation cases.

Committee on Hospitals

Art B. Martin, M.D., Chairman

The Hospital Committee of the Arkansas Medical Society met November 23, 1969, at the Marion Hotel at the Society's third annual officer's conference. Those attending were Dr. Art B. Martin, Chairman, Fort Smith, Arkansas; Dr. Martin F. Heidgen, Russellville, Arkansas; Dr. M. H. Harris, Newport, Arkansas.

The following problems had been referred to the Committee by the Society Reference Committee:

(1) "The need for inclusion of physicians on governing boards of hospitals." The Committee concurred with the proposed change in the Joint Commission on Accreditation of Hospitals. "Physicians who are members of the Medical Staff, where legally permissible, shall be eligible for and should be included in membership on hospital governing bodies in the same manner as are all other knowledgeable and effective individuals. Other physicians should also be considered eligible for membership on the governing body."

The following four alternates have been sug-

gested to give physicians a stronger voice in hospital administration.

A. Establish a Joint Conference Committee.

B. Let the president of the medical staff serve as a member of the governing body.

C. Appoint members of the medical staff as members of the governing body.

D. Appoint individual staff members to governing body committees.

(2) "The future of the hospital emergency rooms in relation to the practice of medicine." The standards recommended by the JCAH were felt to meet the needs and the changing distribution of medical care. Every hospital with an emergency service should organize it as a department, with a chief appointed from the medical staff. Emergency care should be available twenty-four hours a day. Patients should see a doctor without a long wait, and ER care should be equal in quality to the care in other departments of the hospital. Methods of providing medical coverage include the use of house officers under adequate staff supervision, rotating panels of staff physicians and contracting groups whose members are on the medical staff. There should be a plan that specialists are available on call.

(3) "Activities of Utilization Review Committees." The functions of the Utilization Review Committee is being redefined and expanded by Medicare.

(4) "Cooperate arrangements between hospitals in the same and in neighboring communities." Staff physicians should insist on area-wide health planning needs. This planning can better be done by a committee of the governing boards, that includes representatives of the medical staffs. Expensive equipment and services should not be duplicated unless there is an actual health need.

(5) "Consideration of the potentials for the staff and effect of operation in the situation where a community making plans for construction of a new hospital." A committee consisting of the governing board and representatives of the medical staff should be formed to plan educational programs to insure the community of an adequate supply of skilled health manpower.

Committee on Public Relations

A. C. Bradford, M.D., Chairman

This is the committee report for the Public Relations Committee for this past year.

It has been good to have Mr. Paul Berry to work with the committee. We have seen many things accomplished that the committee has tried to do in the past and it is gratifying to see these things being done now in behalf of the Society.

The Public Relations Committee met at our December meeting of the House of Delegates. This was the first meeting with Mr. Paul Berry, and all members present were able to discuss the public relations problems of our Society with him and were all pleased with the work that he is doing. The committee has assumed an advisory role in relation to Mr. Berry's job and will work closely with him.

The Legislative Council of the Arkansas State Legislature requested that the Arkansas Medical Society work with them on the problem of drug abuse in the field of legislation and public education. The chairman of the Council, Dr. John Wood, called a joint meeting of the Physical Fitness and School Health Committee and the Committee on Pharmacy of the Arkansas Medical Society on January 24th at the Sam Peck Hotel. The Council then heard the report of the joint meeting on January 25th and approved the recommendation which was to authorize the Public Relations Committee to head up the educational program on drug abuse. At the time that this goes to press, Mr. Paul Berry and the Public Relations Committee are enthusiastically undertaking the project and will provide a course of action for the State Society to follow. Many of you will be asked to participate in this program.

Sub-Committee on Liaison with the Woman's Auxiliary

H. King Wade, Jr., M.D., Chairman

We have no activity to report as far as this committee is concerned. I have been in touch with Mrs. Parkerson, the President of the Auxiliary and we have had several conversations during the year; however, she has stated that no problems have arisen relative to the Auxiliary in which consultation was needed with this sub-committee.

We have been ready at all times to assist her if needed.

Sub-Committee on State Health and Medical Resources for Civil Defense

Edgar J. Easley, M.D., Chairman

During the period, considerable progress was made throughout the State in improving and expanding medical resources, facilities and the organization for Civil Defense, Emergency Health Service Plans, Medical Stock Pile Programs and Medical Self-Help Training Programs. These accomplishments were made possible through the manifold cooperation of local physicians, local medical societies and local health departments with this Sub-Committee, the Arkansas Department of Health, its Health Mobilization Program, Medical Self-Help Program, the Arkansas Dental Association, Arkansas Pharmaceutical Association, the county judges and mayors of the State.

The Sub-Committee reviewed, with approval, the proposed Garland County Emergency Health Service Plan. The plan is being projected through the Arkansas Hospital Association; a $10,000 federal grant is involved in the plan. The Garland County Medical Society and the local hospitals of Hot Springs, in cooperation with the Health Mobilization Program of the Arkansas Department of Health, are working very closely together in developing the plan with consultative services available from the U. S. Public Health Service.

Appreciable progress is being made in further developing Statewide communications, hook-ups and services with reference to emergency and disaster programs. At present, thirty-five (35) hospitals in the State are participating in the Medical Stock Pile Program. The State now has eighteen (18) package hospitals placed in desirable locations in the State. Each of the newer package hospitals are of 250 bed capacity and are stocked with thirty (30) day supplies.

During the period, the Medical Self-Help Program has shown significant growth. At present 3,100 of our citizens have been trained in the application of external cardiac massage. Approximately 157,000 have attended the sixteen (16) hour course in Self-Help. During the calendar year 1969, 25,000 individuals received this life-saving training.

The Committee is gratified and appreciative of the above listed cooperative accomplishments. After considerable discussion and deliberation, the Committee was unanimous in the following recommendations to the Arkansas State Medical Society and the proper reference committee of its House of Delegates for study and adoption:

1. The recommendation that the State Medical Society strongly encourage each county or district medical society to support and participate in disaster preparedness in their respective communities and areas.
2. Recommends — that the Arkansas State Medical Society encourage all Society members throughout the State to participate in future (to be announced) disaster exercises and that members of the State Medical Society be given an assignment in a disaster exercise by each local medical society.
3. Recommends — and re-emphasizes that all county medical societies that do not have a disaster committee immediately appoint such a committee and instruct this committee to work closely with the local hospitals and the State Health Department in developing community emergency health services and plans for use of emergency health resources.
4. Recommends — that allied medical societies and paramedical groups be encouraged to participate in disaster medical preparedness.
5. Recommends — that this Sub-Committee may again be authorized to cooperate with other interested agencies and encourage a formulation of plans to execute a disaster drill in some small selected county.
6. Recommends — that the State Health Emergency Operating Center unit be supplemented by the base statement of the State Radio System and that the necessary funds for the purchase of the necessary basic equipment be included in the State Department of Health Biennial Budget in the amount of approximately $6,000.
7. That these recommendations again be distributed to at least all county and district medical societies, the Arkansas Dental Association and the Arkansas Pharmaceutical Association.

Advisory Committee to the Arkansas State Medical Assistants Society

A. C. Bradford, M.D., Chairman

The Arkansas State Medical Assistants Society is a very active group. These ladies have had regular meetings and your committee chairman has met with them in an advisory capacity. The next House of Delegates Meeting of the Arkansas State Medical Assistants Society will be at the time of their State convention in April which will be held at Texarkana, Arkansas. We should continue to give them our support and I hope that each physician in the State Society will encourage his employees to become members of the Arkansas State Medical Assistants Society.

Committee on Insurance

Thomas D. Honeycutt, M.D., Chairman

The Arkansas Medical Society Group Life Insurance Plan was underwritten by Northwestern National Life Insurance Company with an effective date of August 1, 1959.

Participation in the plan has steadily increased since the effective date. More than $6 million of life insurance protection is in force to protect the families of members of our Society. Since this date (August 1, 1959) over $470,000 of benefits have been paid to beneficiaries and estates of persons insured under the plan.

The plan has paid a regular semi-annual dividend for many years. At the present time, all participating members receive a 9.3% semi-annual dividend on their premium. On August 1, 1970 this dividend will be increased to 12.0%.

In addition to the semi-annual dividend, Northwestern National voluntarily reduced the premium rate on all insured members under age 50 on August 1, 1969.

In August of 1969 the Insurance Company opened the enrollment of this plan to eligible members for an additional $10,000 of insurance without evidence of insurability; however, the required number of applications was not received and these applicants were asked to furnish evidence of insurability.

New members of the Arkansas Medical Society are allowed the privilege of purchasing up to $20,000 of group life insurance without evidence of insurability if they enroll within 120 days of joining the Society.

The above report is dampened by the following report of the Group Professional Liability Plan.

At the end of December 1969 the St. Paul Insurance Company had a participation of 32.2% of Society members insured under this plan. This is far below company and Insurance Committee expectations and both the company and your Insurance Committee feel this is partial explanation of the increasingly poor performance the plan is experiencing.

The loss ratio for 1967 was 51.2%; for 1968 it was 74.2%, and in the first six months of 1969 the ratio was 151.1% with indications that the losses would exceed 200% by the end of the year.

The company has informed your committee there is only one practical solution and that is to gain PARTICIPATION APPROACHING 100% or search for other methods of meeting this pressing problem.

Reports of the Group Practice Overhead and Disability plans indicate these are doing well and have recently been up-dated to make them more attractive to the younger physicians entering practice.

Committee on Liaison with the Nursing Profession

Frank Padberg, M.D., Chairman

The Committee on Liaison with the Nursing Profession met at the mid-winter meeting of the Arkansas State Medical Society in November. Plans were formulated at that time for a joint meeting of the State Medical Society and the State Nurses' Association, to be held on February 15, 1970. A meeting of the doctors and nurses of Pulaski County was held early in the year, as a forerunner for the State meeting.

Several other meetings were held with the Nurses' Association representatives throughout the year. Plans were outlined at these meetings to try and foster better cooperation and understanding between the two groups in hopes of promoting better patient care.

Committee on Medicine and Religion

Jerome S. Levy, M.D., Chairman

The Committee did not actively participate in any continuing program in our field during the year. We did co-sponsor with Reverend Dr. Don Corley a series of Dialogue Conferences through the Pastoral Care Department of the Arkansas Baptist Medical Center. These were held at the University of Arkansas Medical Center, the Gravette Medical Center, Ouachita General Hospital in Hot Springs, Jefferson Hospital in Pine Bluff, Magnolia Hospital, Community Hospital in Paragould, Ouachita Hospital in Camden and McGehee Hospital.

In this series of conferences, Dr. Corley reported that there were 69 doctors and 244 clergymen who participated. This does not include hospital personnel or others who may have attended. These conferences emphasized the importance of pastoral care and the need for close dialogue between doctor and clergyman.

Your chairman attended the Conference for Chairmen of the State Medical Societies' Committees on Medicine and Religion held by the AMA in Chicago. Dr. Kenneth Siler will attend this conference in 1970. Your chairman also addressed the Women's Society for Christian Service of the Methodist Church in Stuttgart on February 4, 1970. About 50 persons were in attendance to hear a discussion on the question of prolonging life . . . or prolonging dying in an answer to the question, "Doctor, why don't you let me die?"

Constitutional Revisions Committee

Lee B. Parker, Jr., M.D., Chairman

Several constitutional changes will be acted upon at the next annual session in 1970.

At the 1969 annual session three changes were begun:

1. The name of the Post-Graduate Education Committee is to be changed to Continuing Education Committee. It was also proposed that each councilor district should have one representative on this committee.

2. The Sub-Committee on Aging and Sub-Committee on Mental Health were to become full committees.

In addition to these changes, the committee recommends two additional changes as follows:

1. From Chapter VIII, Section (A) #3 (after Committee on Public Health) delete the following: "Liaison with Public Health Department". This will serve to eliminate the Sub-Committee on Liaison with the State Board of Health as recommended in the 1969 annual session.

2. Amend Chapter I, By-Laws, Section 7, Military Members, Section 7 (A):

Regular members of the Arkansas Medical Society who are in the service of the Armed Forces of the United States, not as career officers, may be classified as military members, and carried on the rolls of their respective county societies as such. Military members shall have a waiver of dues during the time of service, provided that they are in good standing at the time they entered the Armed Forces. Military members shall enjoy full membership privileges and certificates of membership shall be issued to them for each year.

Section 7 (B): Young physicians going from internship or residency to military service shall be granted military membership with dues exemption, provided the request for such membership is transmitted through a component society. Such military membership shall be on an annual basis only. The requirement for active membership prior to exemption shall be waived for such military members. Such members shall enjoy full membership privileges except that they may not vote or hold office, and certificates of membership shall be issued to them. This section shall not be construed to mean that military membership may be granted to those physicians who enter military service after a period of active practice during which time they were not members of the Society.

The reasoning for this change is to allow our younger physicians going into the armed services from internship or residency programs to become military members, if they so desire, without first having been regular members of the Society. This will allow the physician in the service and the Society to maintain contacts through the Journal and other mailings from the State ofice. In this small way perhaps these physicians will be further encouraged to return to Arkansas when their service tour is completed.

Arkansas State Advisory Committee to the Selective Service System

Gerald H. Teasley, M.D., Chairman

During the year 1969 there have been very few requests sent to the Advisory Committee to Selective Service System. At the present time there are no inquiries concerning the availability of physicians for active duty service. It is hoped that this situation will continue.

Twenty-One-Man Fee Committee

C. C. Long, M.D., Chairman

Two meetings were held by this committee during the year of 1969 — the first being on April 13th. The agenda for this meeting concerned questions regarding the payment of fees for certain procedures. The first group represented the plastic surgeons. They felt that the fees paid for certain procedures billed by them had been unjustly cut. After a rather lengthy discussion concerning the training, the difficulty of the work, the legal liability and responsibility of plastic surgeons in doing these various procedures, the opinion of the 21-Man group, as expressed by the motion, was that if written justification and explanations were submitted with claims, a much more realistic appraisal of the charges could be made. The committee recognized the difficulty in accurately coding many types of plastic procedures and felt that in many instances the carrier and the 5-Man Review Committee were unable to give a just, euitable opinion concerning fees on these procedures with which they were not well acquainted, particularly if the billing and explanation was not in considerable detail.

The second discussion was concerning the various charges of internists relative to work ups and complete examinations. They felt they were justified in having some lee increases and some reevaluation of the UCR book charge. From the discussion, it was apparent that different internists arrive at their charges by different methods and that while, perhaps the overall charge was not particularly different, the breakdown and the charges for the various components of the examination vary considerably. It was moved and seconded and passed that a group composed of two members of the 21-Man Committee and two members from the group of internists would meet together and adjudicate the problem as equitably as possible. Dr. Mitchell further explained that the Social Security Administration had frozen all fees since December of 1968 except in very unusual circumstances, in which the Part B carrier would have to receive approval from the Bureau of HEW before elevating any fee above the existing range.

There being no further business the meeting adjourned.

The second meeting of the committee was held on September 21, 1969. Before beginning the agenda on this meeting, it was called to the attention of the members the important responsibilities of the 21-Man Committee representing organized medicine in this State working with Blue Cross-Blue Shield. It was emphasized that, in both regular business and in the fascil responsibilities for government programs, that Arkansas Blue Cross-Blue Shield had been willing to meet with representatives of organized medicine and strongly consider their recommendations in matters of claim review and policy. It was felt that the full committee should be reminded of this and that the Medical Society in general should be made aware of how favorable this position was and that they should guard this relationship closely as this type of participation was not only very beneficial, but in many states and areas, unusual, and impossible with other carriers.

The committee members were given copies of a resolution that had been handed to Blue Cross-Blue Shield from the Union County Medical Society. This resolution had previously been considered by tthe board of Arkansas Blue Cross-Blue Shield and the Professional Committee of the Board of Trustees, who had suggested that the 21-Man group should consider this resolution. The major points of this resolution were the component Society's objection to the Medicare carrier's insistence on receiving proper itemization of services and the necessity of physicians disclosing this type of information in order to receive pay for reasonable charges. Involved in this discussion was clarification of the word "investigate", which apparently had been written across the top of several claims returned lor itemization of services. It was explained by the Medical Director of Blue Cross-Blue Shield that this term "investigate" had been used merely to designate certain internal review procedures and that it had not been intended to indicate any type of investigation of the physician who had performed the services and was in no way meant to reflect on

his ability or integrity. The Director further stated that in the future this would not happen as this had been corrected. Following this lengthy discussion the following motion was made, seconded and passed. The resolution would be received for information and the committee expressed its interest and concern, but, unfortunately, under HEW interpretations there was no way to pay claims without proper itemization of services. The explanation of the use of the word "investigate" was accepted as given by the Medical Director. This expression from the 21-Man Committee was to be given to the resolutions committee of the State Medical Society.

Following this, the regular items on the agenda were considered. A series of claims were reviewed in which the carrier and the sub-committee felt that gross over-utilization was evident from the type of treatment, the amount of treatment, and the diagnosis. Also, the question of the legality of the giving of narcotics under Medicare to a registered narcotic addict was also discussed. There appeared to be no reason under Medicare why this could not be done; however, under State laws there appeared to be considerable question of legality of the furnishing of narcotics to a known addict. The physician in question appeared before the group and presented his case, giving his reasons for treatments and the basis on which he thought he was justified. Following his discussion, he retired and the group further discussed the matter and voted to approve the committee's action and disallow the claims.

Another item of discussion was concerning a speciality group and a procedure which was performed by one member of this group in a different manner from that which was usually performed. He felt that the different technique involved more time and skill and warranted a different range of fees from that which was in the usual and customary range. Considerable discussion was held on this matter. After this discussion the ENT member on the 21-Man Committee felt that a definite decision should not be made. A motion was made that this member of the speciality group on the 21-Man Committee would meet with the entire specialty group and after discussion would report back to the full 21-Man Committee the feelings of the rest of the men in this speciality in the State as to whether they wish to establish separate fee ranges for different procedures for performing similar types of services.

There being no further business this meeting adjourned.

Student AMA Liaison Committee

Alfred Kahn, Jr., M.D., Chairman

A meeting of the Arkansas Medical Society's Liaison Committee with the Student American Medical Association was called for 10 o'clock on November 23, 1969. No representatives of the Student American Medical Association were there and an ad hoc committee was made up of interested people and a brief committee meeting was held. Participants in this committee meeting were Dr. Frank Padberg, Dr. James Headstream, Dr. Fred Inman, and Dr. Alfred Kahn, Jr., acting as Chairman.

The ad hoc committee discussed the current Student American Medical Association program. It was felt that in most respects it was quite satisfactory.

Some attention was given to the editorial material published in the student publication called "The Medico". It was felt that as long as it was made clear that the editorial opinion expressed on the S.A.M.A. page was shown to be a personal view and not representative of the S.A.M.A., it would be satisfactory. As a matter of fact, after a particularly unusual point of view was presented in a recent issue of "The Medico", the president of the Student American Medical Association for the Arkansas Chapter published a second editorial stating that the views expressed in this unusual editorial were solely those of the writer and not the Student American Medical Association.

The meeting lasted approximately half an hour. There were no new recommendations made at this time.

Committee for Correlation of Government Plans

L. A. Whittaker, M.D., Chairman

The following is a report of the Committee for Correlation of Government Plans. The above mentioned committee has not had a formal meeting since the annual meeting in April, 1969. Many government proposals and laws have been enacted since that time affecting Medicare and Medicaid and, in general, this information has been disseminated to all physicians in the State.

A proposal for a feasibility study for an area-wide system of medical services for the Fort Smith region was presented to the Sebastian County Medical Society on December 9, 1969. After lengthy discussion, it was decided to hold action on this proposal until the next meeting. On January 13, 1970, the Sebastian County Medical Society did not endorse this proposed plan of study.

While this report is necessarily brief, any review of the legislation that has been passed in the last six months is not considered feasible at this time.

Committee on Emergency Health Services

Joe A. Norton, M.D., Chairman

The Committee on Emergency health Services of the Arkansas Medical Society has not had a formal Committee meeting during the year.

However, with the consent of the Council of the Arkansas Medical Society, the help of some of the Committee members, and the cooperation of many other lay and professional agencies, a very successful Emergency Health Service Conference was held at the Medical Center in Little Rock in August 1969. The attendance was very fine. The participation was excellent. The preconference planning and publicity were very satisfactory, and demonstrated the value of cooperative efforts among the various lay and professional groups concerned with emergency medical services. Over 40 agencies cooperated in the planning, together with a basic planning committee that represented the University Medical School, the Veterans Administration, the American College of Surgeons, the Arkansas Medical Society, the State Health Department, the Health Planning Office of the Governor, and the Traffic Safety Office of the Governor.

As a result of the fine conference in August, 1969, other smaller conferences and lecture series have been held over the State by some of the co-operating members of that conference. Also, a task force on Emergency Health Services is being put together by the Health Planning Office of the Governor, to coordinate the activities of the many agencies concerned in emergency medical services. The Arkansas Medical Society will be represented on that task force.

Dr. Robert Bransford was appointed by the Council to succeed myself as Chairman, and I know that he will give valuable, dedicated, and aggressive leadership to the matter. He has already shown his interest and initiative by participating in a very fine conference in the Texarkana area this past year.

I am very happy to see the matter of Emergency Health Services being given consideration by the Medical Society, and I hope that there will be annual large statewide conferences, and many annual regional conferences, dealing with the various aspects of this important medical problem, and utilizing the talent, ability, and services of the many lay and professional people over the State, who have already demonstrated their interest in their involvement in this first Emergency Health Services Conference.

First Councilor District Professional Relations Committee

F. E. Utley, M.D., Chairman

During the past year, the Professional Relations Committee of the First Councilor District has had no cases of any significance.

In the early part of 1969 there were some Medicare claims submitted on dependents of Army, Navy and Air Force personnel in which there was some question about the charges by the physicians. In most of these cases it was due to either improper coding as such or lack of explanation on the part of the reporting doctor. All of these were settled without any difficulty and to the satisfaction of all parties concerned.

To my knowledge, there have been no complaints that have reached the Professional Relations Committee due to excessive charges, undue charges, etc.

Second Councilor District Professional Relations Committee

M. C. Hawkins, Jr., M.D., Chairman

As chairman of the Second Councilor District Professional Relations Committee, Arkansas Medical Society, I wish to report that my committee had no business to transact during the year of 1969.

Seventh Councilor District Professional Relations Committee

C. F. Peters, M.D., Chairman

The Seventh Councilor District Professional Relations Committee handled several cases during the year 1969. All of the cases were settled in a satisfactory manner to both parties concerned.

Eighth Councilor District Professional Relations Committee

Richard M. Logue, M.D., Chairman

I am happy to report to you that no matters were brought before the Eighth Councilor District Professional Relations Committee of which I had a calling of the full committee. Several questions arose concerning varied matters but these were handled by phone by the chairman. No further action was deemed necessary.

Ninth Councilor District Professional Relations Committee

Ross Fowler, M.D., Chairman

The Ninth Councilor District Professional Relations Committee received one complaint from the Oklahoma Welfare concerning overutilization of a Medicare Claim.

This complaint was referred to the Twenty-One Physician Committee of the Arkansas Medical Society.

Report of the Council

John P. Wood, M.D.

The Council of the Arkansas Medical Society met on Saturday, August 6, 1969, in Fort Smith, Arkansas. Dr. Wright Hawkins presented plans for the 1970 Annual Session which were discussed and approved by the Council.

The Council met on Sunday, August 17, 1969, in Fort Smith, Arkansas, and transacted the following business:

I. Members of the Sebastian County Medical Society in attendance as guests of the Council were introduced.

II. Mr. Paul Berry, the assistant to the executive vice president, was introduced to the Council.

III. Voted to work with other licensure boards not dependent on tax funds to be excluded from the provisions of the Constitutional Convention Proposal #112.

IV. Asked that the State Medical Board continue to work with other states on problems concerning reciprocity of medical licensure.

V. Discussed the problems of malpractice liability insurance and heard advice that the American Bar Association is working on the problem.

VI. Voted $150 additional donation to the Arkansas Chapter of the Student American Medical Association to assist them with their fall picnic for the freshman class at the Medical School.

VII. Recognized and commended Miss Leah Richmond, administrative assistant, for having soloed an airplane on August 13th.

VIII. Approvel a proposal by Arkansas Blue Cross-Blue Shield to upgrade the benefits paid under the Arkansas Medical Society group health plan. The plan increases the hospital room allowance to $30 per day.

IX. Heard Mr. Schaefer discuss the new tax reform bill which imposes income taxes on revenue received by the Arkansas Medical Society for profits on advertising in the Journal and on scientific exhibits at the Annual Session and on other "unrelated business income".

X. Referred to the Arkansas Medical Society Committee on Immunization a recommendation by Dr. Fowler that the Society undertake a state-wide German measles immunization campaign similar to the Society-sponsored campaign for the Sabin oral polio vaccine.

XI. Voted to ask the Constitutional Revisions Committee to draft a change in the by-laws providing dues-exempt membership for those young physicians entering military service immediately following internship or residency.

XII. Voted to investigate the desirability of joining a newly formed Health Careers Council.

XIII. Accepted Dr. T. E. Townsend's resignation from the Council and unanimously elected Dr. Raymond Irwin of Pine Bluff to fill Dr. Townsend's unexpired position on the Council.

The Council met on Sunday, October 26, 1969, and transacted the following business:

I. Voted to make the members of the Execu-

tive Committee of the Council automatically members of the 21-Man Fee Committee for the length of their terms on the Executive Committee.

II. After discussion, voted to continue the present system whereby the Council appoints members to the 21-Man Fee Committee of the Society.

III. Heard a report by Mr. Warren that legislation allowing corporations of one physician to be formed in the State will be introduced in the next session of Legislature.

IV. Referred to the Insurance Committee a proposal by PRO Services, Inc., for a Society group retirement plan under Keogh legislation.

V. Nominated Dr. Theodore C. Panos to attend a White House Conference on Food and Nutrition in Washington, D. C.

VI. Adopted a resolution commending Mrs. Charles F. Wilkins, Jr., for having been elected and having served as a member of the Arkansas Constitutional Convention.

VII. Changed legal counsel's retainer to $4,000 a year whether or not the Legislature is in session.

VIII. Approved the Executive Committee's meeting with the Insurance Commissioner, Mr. Allan Horne, and Mr. Horne's offer to assist in establishing a medical-legal screening panel for threatened malpractice liability claims.

IX. Voted not to approve acceptance of advertising and commercial exhibits from Medicard, Inc.

X. Nominated Dr. R. M. Bransford of Texarkana as chairman of the Emergency Health Services Committee replacing Dr. Norton, resigned.

XI. Referred back to the Executive Committee a letter from Dr. Jacob Ellis and a resolution from the Union County Medical Society decrying the influence of third parties on the ethical relationship between physicians and patients.

XII. Voted to approve the Arkansas Medical Society carrying out an educational program on drug abuse and assisting the Legislative Council in drawing up necessary legislation on the subject.

XIII. Voted to instruct legal counsel and the Legislative Committee to oppose the broadening of the privileges of osteopaths.

XIV. Decided to ask the Executive Committee to review a Medicare claim appealed by Dr. James Kolb.

XV. Voted to purchase a group life insurance program for the employees of the headquarters office which could be purchased without additional cost to the Society as a result of savings on the retirement program.

XVI. Requested the chairman of the Council to appoint a committee to review the retirement program for headquarters employees.

XVII. Heard a discussion of the VISTA program in Lee County.

XVIII. Moved to commend Dr. George Mitchell for his work, patience, and diplomacy as medical director of Arkansas Blue Cross-Blue Shield administering Medicare, CHAMPUS, and "usual, customary and reasonable" fees under private programs.

The Council met on Sunday, November 23, 1969, and transacted the following business:

I. Voted a resolution of regret on the death of Dr. James M. Kolb, Sr.

II. Accepted the resignation of Dr. James Morrison as councilor and elected Dr. William S. Orr, Jr., of Little Rock to succeed Dr. Morrison.

III. Instructed Arkansas' delegates to the American Medical Association to oppose a limit on the length of time a delegate may hold that position.

IV. Voted to cooperate with the Arkansas Pediatric Society in promoting the dispensing by pharmacists of all medications in child-protective containers.

V. The committee appointed to review the retirement program for headquarters employees recommended that the Society

adopt a policy of retiring its employees at age 65 with 25 years or more of service on a retirement of 65% of their annual earnings, including Social Security benefits. The committee's recommendations were approved and adopted as policy.

VI. Heard a report on the Health Careers Council and voted to seek representation on the Council, and requested the Executive Committee to select the Society's representative.

VII. Voted to approve the Regional Medical Program instituting a project covering only a small region of Arkansas rather than the whole State. Council requested also that the Medical Education Committee continue to work with the Medical School in the promotion of the Regional Medical Program.

VIII. The Council voted to ask the Immunization Committee to report on its progress on a measles immunization campaign.

IX. Voted $50 for the purchase of a trophy and golf balls to be given as prizes for the golf tournament during the Annual Session. This action was to relieve the golf chairman of the responsibility of soliciting gifts from merchants and detail men.

The Council met on Sunday, January 25, 1970, and transacted the following business:

I. Took under advisement a request from the Arkansas Chapter of the Student American Medical Association for a contribution of $1,500.

II. Approved the presentation of a resolution to the Arkansas State Police praising the traffic safety program for 1969.

III. Requested the Committees on Aging and Traffic Safety to submit proposed legislation to the Committee on Legislation which would relieve physicians of the responsibility of designating which applicants should not receive licenses to operate motor vehicles.

VI. Voted to authorize Mrs. Charles F. Wilkins, Jr., to obtain information on American Medical Association Education and Research Foundation and work with the Medical Education Committee on a program soliciting donations. The Council also authorized the Auxiliary to undertake the solicitation of donations for A.M.A.E.R.T.

V. Received and approved the proposed budget for 1970.

VI. Council voted to explore the possibility of obtaining a long-term lease at a figure no higher than the rental budgeted in the approved 1970 budget.

VII. Approved improvements in the present Group Disability Insurance Plan for members of the Arkansas Medical Society. Improvements include a guaranteed renewable clause and a new step-rate method of premiums lowering the rate for younger members. The plan is administered by Rather, Beyer and Harper Insurance Agency.

VIII. Directed the Executive Committee of the Council to reply to Dr. Larkin Wilson and Dr. Jacob Ellis of the Union County Medical Society giving them a clear and unequivocal answer on the Medical Society's position on the Union County protest of the administration of Medicare and "usual, reasonable and customary" programs.

IX. Voted to request the Welfare Department to work out a practical method for reimbursing nurse anesthetists for their services.

X. Approved expenditure of $75 for having a brochure printed advertising a joint physicians-nurses' meeting arranged by the Committee on Liaison with the Nursing Profession.

XI. Directed that the members of the Council submit suggestions for nominations to the ARK-PAC Board of Trustees.

XII. Referred the individual parts of the report of the Sub-Committee on Mental Health to various committees of the Society.

XIII. Decided to table a report of the Committee on Immunization having to do with a suggested state-wide measles immunization program.

XIV. Heard Dr. Verser report on negotiations with osteopaths on increasing osteopathic privileges.

XV. Heard Dr. Theodore Panos report on the White House Conference on Nutrition and asked him to summarize his report for publication in the Journal.

XVI. Approved an Executive Committee recommendation that the Public Relations Committee be designated to lead the efforts of the Committee on Pharmacy and the Committee on Physical Fitness and School Health on a Society program on drug abuse in the State.

XVII. Voted to limit the Medical Society contribution to SAMA to the $600 included in the budget approved for that purpose.

Report of the Executive Vice President

Mr. Paul C. Schaefer

The Council and the House of Delegates continue to expand and improve the services of the Arkansas Medical Society to physicians. 1969 saw the addition of two major programs to the overall undertakings of organized medicine in Arkansas.

The Society through its headquarters office, hoping to bring about greater unity within the profession, offered the services of a "Specialty Desk" in Society headquarters to all of the specialty societies in the States. Full administrative and clerical services were offered in the hope that the availability of a work force would make each section more viable and give greater cohesiveness to medicine as a whole.

Of the thirteen specialties organized in the State, only the sections of Surgery, E.E.N.T. and Orthopedics accepted the Society's offer. It is hoped that the other specialty groups will again consider the availability of this assistance and join our "Specialty Desk".

The second project undertaken by the Society was the employment of an assistant to the executive vice president. The primary responsibilities of this position are public relations, committee work and working with county societies.

Mr. Paul Berry of Fayetteville, Arkansas, was employed for this position. The availability of an extra man on the staff made it possible to give much more service to the news media. Consequently, coverage of our meetings (especially television) was much improved.

We anticipate that with Mr. Berry's assistance the Society's committees will become more active and county societies will be better informed on the problems and policies of organized medicine.

Maintaining liaison and negotiations with the various government agencies on administration of such programs as Medicare and Medicaid continue to demand much time and attention.

From the headquarters office we are in a position to appreciate the amount of time, trouble and expense invested in the future of medicine by the officers, councilors and active committees of the Arkansas Medical Society. We pay tribute to their wisdom and dedication.

Budget Committee

W. R. Brooksher, M.D., Chairman

The Budget Committee submitted the following budget for 1970. It has been approved by the Council.

The expense budget is broken down in more detail this year to further segregate expenses as required by the new tax laws on Journal profits and scientific exhibits. Expenses for the new Public Relations Department are also identified.

INCOME

Budget Item		1970 Budget
Membership Dues		$108,990.00
Journal Advertising		
Local	$ 5,500.00	
National	30,000.00	35,500.00
Booth Income		6,500.00
Annual Session Income		3,200.00
AMA Reimbursement		800.00
Miscellaneous and Rosters		250.00
Interest on Government Securities		9,000.00
Retirement (Employee Contribution)		352.00
Specialty Desk		480.00
		$165,072.00

EXPENSES

Salaries		
Society	$42,555.00	
Public Relations	14,416.00	
Journal	7,785.00	
Exhibit	120.00	$ 64,876.00

Budget Item		1970 Budget
Travel & Convention		
Society	10,290.00	
Public Relations	3,000.00	
Journal	1,920.00	15,210.00
Taxes		
Society	1,536.00	
Journal	414.00	
Exhibit	1,500.00	3,450.00
Retirement		13,488.00
Stationery & Printing		
Society	1,132.00	
Public Relations	100.00	
Journal	168.00	1,400.00
Office Supplies & Expense		
Society	2,968.00	
Public Relations	200.00	
Journal	432.00	3,600.00
Telephone & Telegraph		
Society	2,200.00	
Public Relations	1,300.00	
Exhibit	15.00	
Journal	361.00	3,876.00
Rent		
Society	5,280.00	
Journal	720.00	6,000.00
Postage		
Society	2,450.00	
Public Relations	200.00	
Journal	750.00	3,400.00
Insurance & Bonds		
Society	2,276.00	
Journal	624.00	2,900.00
Auditing		
Society	325.00	
Journal	48.00	400.00
Council Expense		1,000.00
Journal Printing		25,000.00
Annual Session		
Society	7,100.00	
Exhibit	1,400.00	8,500.00
Winter Meeting		790.00
Senior Medical Day		1,000.00
Public Relations		---
Dues & Subscriptions		
Society	1,760.00	
Journal	240.00	2,000.00
Gifts & Contributions		
Society	660.00	
Journal	90.00	750.00
Woman's Auxiliary		1,200.00
Legal Services		
Society	3,794.00	
Journal	506.00	4,300.00
Special Committee Expense		250.00
Rural Health		500.00
Miscellaneous		
Society	34.00	
Public Relations	10.00	
Journal	6.00	50.00
Freight & Express		
Society	34.00	
Public Relations	10.00	
Journal	6.00	50.00
Office Equipment		
Society	352.00	
Journal	48.00	400.00
Specialty Desk		25.00
		$164,415.00

Report of the Senior Medical Day Committee
Ralph A. Downs, M.D., Chairman

Dr. Edward R. Annis, a past president of the American Medical Association, was the guest speaker for the "senior medical day" banquet on May 7, 1969.

A reception preceded the dinner hosted by the Arkansas Medical Society at the Little Rock Country Club. The president of the Society, Dr. Ross Fowler of Harrison, presided at the dinner meeting.

This annual dinner for the senior medical students at the University of Arkansas School of Medicine and their guests has been very well received by the students. The banquet is the Society's first official contact with its future members. Attendance at the 1969 banquet was very good. There were 91 students invited to atted with their wives or guests. We had 150 dinner reservations for students and their guests, 45 for physicians, their wives, and other guests.

The Committee is now making plans for the 1970 banquet.

Report from the School of Medicine
Winston K. Shorey, M.D., Dean

The two previous annual reports from the University of Arkansas School of Medicine to the Arkansas Medical Society have been relatively comprehensive and have emphasized overall needs and deficiencies with which the school has struggled and continues to contend. This report is submitted with the conviction that the membership of the Arkansas Medical Society is well

aware of the very limited resources with which the Medical School conducts its program; the limitations resulting in an inadequate number of faculty in relation to the number of students, facilities that have had no general expansion for fifteen years, and an operational budget that has not permitted modernization of equipment and facilities during a period of rapid advancement in medicine. The essence of this report is a presentation of the productivity of the School of Medicine in terms of medical students and graduates over a ten-year period beginning with the academic year 1961-62 and extending through 1970-71. The selection of this ten-year period rather than the calendar decade of the 1960's seems appropriate inasmuch as it coincides with the tenure of the current administration of the Medical School. The information being presented is summarized in the following table, and comments will be made regarding certain portions of the table.

Student Experience and Activities of Graduates

University of Arkansas School of Medicine

February, 1970

	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
Total Enrollment School of Medicine	331	340	347	354	361	369	385	394	405	421
Number of Graduates	74	77	74	79	79	88	86	91	87	105
The numbers below indicate the current activities of the graduates in each class noted above.										
Number in Military Service	7	11	12	23	35	41	27	In Internships	Now Seniors	Now Juniors
Number taking Additional Training in Arkansas	2	5	8	15	22	11	17			
Number taking Additional Training Elsewhere	6	7	20	16	10	19	38			
Number in Specialty Practice in Arkansas	18	19	4	7		1				
Number in Specialty Practice Elsewhere	19	17	7	5	1	2				
Number in General Practice in Arkansas	16	15	11	12	7	9	3			
Number in General Practice Elsewhere	6	3	8	1	3	4				
Deceased			3							
Inactive			1		1	1	1			

The ten-year increase in total four-year enrollment in the School of Medicine is 90 students or 27 per cent. Total enrollment is dependent upon two factors: 1) The number of first year students admitted to the Medical School, and 2) retention of medical students after they are admitted. The size of the freshman class in 1961-62 was 105, an increase from 96 the previous year. In 1967-68 the size of the freshman class was again increased to 110. A major problem during the early years of the ten-year period being considered was the loss of fifteen to twenty students from each entering class by the end of the first year. This attrition rate has decreased significantly during the latter years of the ten-year period. This decrease in attrition rate can be credited to: 1) Increased capability and qualifications of applicants to medical school, 2) adherence by the Admissions Committee to a policy of applicant selection based entirely upon academic qualifications and aptitude for the study of medicine, and 3) efforts by the faculty to provide a stimulating educational program.

The increase in class size in the junior and

senior (clinical) years resulting from the combination of increased admissions and decreased attrition further taxes the already inadequate clinical facilities and number of faculty. Were it not for the Little Rock Veterans Administration Hospital and the faculty members salaried through that institution, the teaching program could not be conducted at the current level.

Number of Graduates

The most obvious measure of a medical school's productivity is the number of qualified graduates it makes available to society each year. The number of physicians graduated by the University of Arkansas School of Medicine has increased from 74 in 1962 to a confident prediction of 105 in 1971, an increase of 31 physicians or 42 per cent. The effect of this large increase will be felt within the state during the mid and late 1970's as this increased number of graduates enter practice.

Activities of Graduates

Information is provided in the enclosed table regarding current activities of graduates of the School of Medicine. Only the first seven of the ten years under consideration are of significance in this regard, inasmuch as the latter three years involve one class whose members now are interns and two classes whose members are still students.

The total graduates for the years 1962 through 1968 number 557 of whom 156 currently are in military service, 196 are engaged in residency training, 100 are settled in specialty practice, 98 are settled in general practice, 4 are temporarily inactive, and 3 are deceased.

A general review of the above table clearly demonstrates the long period of time that transpires between graduation of a class of medical students and the final location of its members in their ultimate careers. This long period is the result of military obligations in addition to internship and residency training. It can be noted that of the 74 members of the class graduating in 1962, seven are currently in military service and eight are in training. This represents 20 per cent of a class that graduated eight years ago.

Military Obligations

In considering the needs of society for medical doctors, there must be an awareness of the impact that the requirements for physicians by the armed forces has upon the out-put of medical schools. This has its major effect during the four years following internship and results in a minimal delay of two years before many young physicians enter practice. Among the graduating classes under consideration, those of 1965, 1966, 1967, and 1968 currently are the ones contributing most heavily to the military. The graduates of these four years total 332, and of these, 126 (35 per cent) are in military service.

Location of Graduates

Only the first two classes of graduates (1962 and 1963) of the ten under consideration have a majority of members settled in practice. Classes graduating in 1963 and subsequent years all have a majority of members in military service or pursuing additional training. Therefore, significant information regarding ultimate location and type of practice can be gained only from examination of the experience of the 1962 and 1963 classes among the ten presented in the table. The total number of graduates in these two classes is 151. Of these, 113 are settled in practice. These 113 physicians divide themselves into a group of 68 (60%) who have settled within the State of Arkansas, and another group of 45 (40%) who have settled in other states. Of the 68 physicians who have settled in Arkansas, 31 (45%) are engaged in general practice, and 37 (55% are in specialty practice. Of the 45 who have settled in other states, 9 (20%) are engaged in general practice, and 36 (80%) are in specialty practice.

Institutional Practice

The number of graduates who have selected careers in academic and other types of institutional medicine is not identified in the table. These graduates are included in the figures for specialty type practice. Of the 113 graduates in the classes of 1962 and 1963 who already have established their careers, 16 are staff members of institutions. Eight of these are members of the faculty of the University of Arkansas School of Medicine and eight are in other states.

Comparison of Arkansas Graduates With Those In Rest of Country

The American Medical Association recently completed a study of all graduates of U. S. medical schools who were living on December 31, 1967. This study involved a total of 252,633 physicians. Of these, 108,009 (42.8%) were practicing in the state within which they graduated from medical school. The preceding figures included both private and publicly supported medical schools. When only publicly supported medical schools were considered, 55,566 graduates

(50.2%) of a total of 110,735 were practicing in the state within which they graduated from medical school. This nationwide percentage of 50.2% can be compared with the 60% of Arkansas graduates in the classes of 1962 and 1963 already in practice who are located within the State of Arkansas.

Report of the Arkansas State Medical Board

Joe Verser, M.D., Secretary

The Secretary of the Arkansas State Medical Board makes the following report of the activities of this Board since the last meeting of the Arkansas Medical Society:

The officers and members are as follows:
Wm. A. Snodgrass, Jr., M.D., Chairman
John F. Guenthner, M.D., Vice-Chairman
Joe Verser, M.D., Secretary-Treasurer
Frank M. Burton, M.D.
Hugh R. Edwards, M.D.
Earle D. McKelvey, M.D.
Ross Fowler, M.D.
George F. Wynne, M.D.
C. Stanley Applegate, M.D.
Eugene R. Warren, Attorney

A yearly financial report of the Board's activities, prepared by Johnston, Freeman & Company, Certified Public Accountants, was sent to and approved by the Council of the Arkansas Medical Society.

The Board investigated every case of violation of the Medical Practice Act reported to the Secretary during the year. Following is a summary of the Board's proceedings.

Physicians registered for 1969:	
Resident	1,734
Non-Resident	1,239
Physicians licensed by examination	98
Psysicians licensed by reciprocity	36
Physicians certified to other states	140
Licenses revoked for non-payment of annual registration fee	18
Licenses suspended for non-payment of annual registration fee	52
Licenses revoked for violation of Medical Practices Act	3
Cases convicted for violation of Medical Practices Act	3
Cases pending for violation of Medical Practices Act	3
Injunctions issues	3

The financial statement attached was prepared by Johnston, Freeman and Company, Certified Public Accountants.

ARKANSAS STATE MEDICAL BOARD

BALANCE SHEET

June 30, 1969

ASSETS			
Cash in banks—			
Bank of Weiner, Weiner, Arkansas			
Certificate of deposit #362		$ 8,553.71	
Certificate of deposit #392		2,746.35	$11,300.06
Bank of Harrisburg, Harrisburg, Arkansas			
Checking account	$14,975.96		
Certificate of deposit #531		12,582.05	27,558.01
TOTAL ASSETS			$38,858.07
LIABILITIES AND SURPLUS			
LIABILITIES			
Withholding and FICA taxes deducted in quarter ended June 30, 1969			$ 639.34
SURPLUS			
Balance at beginning of year	$38,202.95		
Add: Excess of receipts over disbursements for year ended June 30, 1969	$279.06		
Increase of payroll taxes withheld but not yet remitted	263.28	15.78	38,218.73
TOTAL LIABILITIES AND SURPLUS			38,858.07

Annual Report (Condensed)
The Arkansas State Department of Health
July 1, 1968 through June 30, 1969

J. T. Herron, M. D., Chairman

THE BUREAU OF LOCAL HEALTH SERVICE was organized to recommend, train, supervise and provide consultative service to all personnel working in the County and City Health Departments, as well as to those employed in the Central Office. Basically a central administrative unit, the Bureau has additional responsibilities of supervising and co-ordinating activities and programs delegated to the various Bureaus, Divisions and Sub-Divisions. The Director of the Bureau serves officially as the Assistant State Health Officer.

Four full-time Public Health Physicians are assigned as Medical Directors in the 17 Districts, individual County and City Health Departments. There should be at least 24. There presently is urgent need for at least 150 additional Public Health Nurses and Public Health Nursing Consultants, and 75 more Home Health Aides. The

acute shortage of these professional personnel is due to the unusually low salaries allowed by available funds and present salary ranges.

THE BUREAU OF VITAL STATISTICS operates on a calendar year for purposes of reporting yearly data, hence the following information for this Bureau is for calendar year 1968.

The Bureau recorded 32,575 live births, 20,896 deaths and 597 fetal deaths.

The ten leading causes of death in Arkansas are diseases of heart (7,838); malignant neoplasm (3,079); cerebrovascular disease (2,867); all forms of accidents (1,451); influenza and pneumonia (798); diabetes mellitus (377); bronchitis, emphysema and asthma (375); certain diseases of early infancy (352); arteriosclerosis (334); other diseases of the circulatory system (319). With a total of 17,790 deaths, these ten leading causes of death represent 85.14 percent of all Arkansas deaths recorded during calendar year 1968.

The number of marriage coupons recorded was 22,004 and 8,483 divorce decrees and annulments were filed with the Bureau. All 1968 records have been recorded and an IBM index completed.

The number of copies of death records issued to county clerks has continued at a rate of approximately 1,500 per month.

As a result of court orders, new certificates were instigated in 1,363 adoptions, 417 legitimations and 284 legal changes of names. Approximately 5,000 birth and death certificate corrections were made. Delayed and prior birth records totalling 9,823 were filed with the Bureau.

THE DIVISION OF COMMUNICABLE DISEASES has for its primary objectives significant control of the incidence of diseases such as tuberculosis and syphilis, and eradication of diseases subject to immunization agents.

Since January of 1967, approximately 194,000 children have been immunized against measles. In a program planned to eradicate Rubella, the Immunization Activities Section organized and conducted the first mass Rubella immunization clinics in Arkansas in September of 1969.

Tuberculosis chest clinics provided services in 62 counties. Two hundred nine tuberculosis patients were admitted to the Jefferson Hospital in Pine Bluff and 87 new treatment cases were hospitalized an average of 33 days each; 22 retreatment cases were hospitalized an average of 26 days each.

There were 7,076 cases of venereal diseases reported to the Division; 5,809 were reported by private physicians, 1,267 by public clinics.

Epidemiology was performed on 181 cases of infectious syphilis in an attempt to identify the source and spread of the disease. Interviews of the 181 cases of primary, secondary and early latent syphilis cases resulted in approximately 600 sex contacts being brought to examination. Of these, 78 were treated for syphilis and 250 were treated prophylactically.

While there were slight increases in the number of cases of malaria contracted outside the continental limits of the United States, and in salmonellosis, and a marked increase in the number of reported cases of typhoid fever, there were decreases in the incidence of reported cases of shigellosis, tularemia, tetanus and typhoid carriers.

THE DIVISION OF HEART DISEASE CONTROL co-operates closely with the Arkansas Heart Association, the University of Arkansas Medical Center and its Referral, Diagnostic and Treatment Clinic. The Division and County and City Health Departments work with the Arkansas State Department of Public Welfare and its sponsored Statewide local Rheumatic Fever Clinics.

Private physicians, County and City Health Departments and Rheumatic Fever Clinics referred approximately 8,264 individuals suspected of having either heart disease, cardiovascular diseases or abnormalities, to the Diagnostic and Treatment Clinic. Eight hundred nine cases were diagnosed and treated for some type of cardiovascular disease or abnormality. Of this number of diagnosed cases, approximately 154 cases were treated, rehabilitated and returned to productive activities.

Physicians' and allied professional workers' education and understanding of heart disease, cardiac abnormalities and vascular accidents have been improved greatly through development of frequent teaching seminars at the University of Arkansas Medical Center. These seminars have been well attended by physicians, public health workers and technicians.

THE DIVISION OF CHRONIC DISEASE CONTROL administers Diabetes High Risk, Glaucoma and Cervical Cancer Screening Programs. Individuals are referred to their respective private physicians for indicated follow-up.

In the Program of Home Health Services, 16,470 nursing and 8,043 physical therapy visits were

made. On referrals by private physicians, an additional 846 physical therapy treatments were given to 173 cerebrovascular accident patients; 414 physical therapy treatments to 104 chronic illness patients.

THE DIVISION OF HOSPITALS AND NURSING HOMES, under direction of the State Health Officer, has the following responsibilities: administration of the Hill-Burton Program; the Program for Construction of Community Mental Health Centers; Construction of Facilities for the Mentally Retarded; Licensure of Hospitals and Nursing Homes; Certification of Hospitals, Extended Care Facilities, Independent Laboratories and Home Health Agencies under the Medicare Program; administration of Act 122 of 1967 which requires that buildings constructed with funds from the State or any of its instrumentalities be so constructed as to be accessible to, and usable by the physically handicapped. Act 58 of 1969 charges the Division of Hospitals and Nursing Homes with still another responsibility, that of establishing and maintaining a Program for the Licensure of Nursing Home Administrators.

The required State Plan was prepared, submitted to and approved by the United States Public Health Service. This Plan is developed to show the relative need for hospital and nursing home beds in the various hospital planning areas of Arkansas. Also, it is used to establish a priority system which is used as the basis for allocation of Federal funds for development of hospital and nursing home projects to supply the needed beds. After the Plan is approved, funds are allocated, contracts let and construction begun. During this process, the Division has the responsibilities of reviewing the plans and specifications, making periodic construction inspections to make certain that the project is being constructed according to the approved plans and specifications, making periodic construction payments, assisting the owner in the completion of equipment lists for both fixed and movable equipment and, finally, performing a final audit on the Project to make certain that the items for which the funds were expended were eligible for Federal participation.

There were four active construction Projects during the past fiscal year in both the Community Mental Health Centers Construction Program and the Construction Program for Development of Facilities for the Mentally Retarded.

Eleven Hill-Burton Projects were completed to give an additional 909 beds. Eight hundred twelve of these beds were general hospital beds, 97 nursing home beds. These Projects represented a total cost of $27,850,771.09. The Federal share was $3,810,880.79.

The In-Patient Facility Licensure Program resulted in the licensure of 201 nursing homes with 13,375 beds; 101 general type hospitals with 7,802 beds; 27 other types of facilities including chronic disease hospitals, tuberculosis hospitals, the State mental hospitals, numerous college infirmaries and facilities for treatment of the mentally retarded.

Under the Licensure Program, the Division is charged with the responsibility of making certain that patients in Arkansas receive as a very minimum the level of patient care which is set forth in the Rules and Regulations governing these institutions. There are seven new nursing homes and three additions to existing nursing homes currently under construction. When completed, they will add 694 privately financed nursing home beds. Also, a privately financed General Hospital Addition Project is under construction which, upon completion, will add 22 beds. A review of plans and specifications for new construction and/or alterations or additions to existing facilities is necessary to assure that these facilities, when completed, will meet the standards set forth in the applicable Rules and Regulations.

Under the Health Insurance Program, 130 facilities were resurveyed for the purpose of certification and 22 new facilities were surveyed for certification. One hundred thirty facilities were visited for determining whether the Utilization Review Committee, as required by the Program, is functioning in accordance with the Approved Utilization Review Plan. In addition, there were 111 consultation visits to facilities to get deficiencies corrected that existed at the time of the survey and/or resurvey of the facility. Fourteen independent laboratories were resurveyed.

In compliance with Act 122 of 1967 (Arkansas Architectural Barriers Law), plans for 85 construction Projects were reviewed and 167 on-site construction inspections were made. The majority of these Projects represent new public schools or additions to existing ones.

Act 58 of 1969 established the Program for Licensure of Nursing Home Administrators. The Division has the responsibility of preparing the

necessary Rules and Regulations, application and license forms in order to implement the Program as required by January 1, 1970.

In the Maternity Service Program of THE DIVISION OF MATERNAL AND CHILD HEALTH, 5,629 patients were given medical and/or nursing care. The Maternity and Infant Care Project which carries out a comprehensive Program of Preventive Health Services and Medical Care in the nine-County area surrounding Pulaski County gave medical and nursing care to 1,213 patients. In the 64 Family Planning Clinics initiated and conducted by the Division in 57 Counties, 5,044 women received medical and nursing services.

The 160 permitted midwives delivered 1,481 babies, 4.4 percent of the total live births in calendar year 1968.

The Jefferson County Special Project for Early Discharge of Premature Infants, started in 1961, showed improved infant mortality and morbidity in the eight years of on-going care. Early discharge from the hospital, and specialized supervision by a comprehensive team (a Pediatrician, Public Health Nurse and Nutritionist) have demonstrated that prolonged hospital care for the premature infant is unnecessary and that care can be improved with special supervision.

Medical and nursing services were given to premature and full-term infants and to pre-school and school children in Well Child Conferences and in home and office visits.

The number of hearing tests given to children during school year 1968-1969 was 94,484; the number of vision tests, 119,628.

The Arkansas Children's Hearing and Speech Center made 433 evaluations and 308 re-checks. As a result of this activity, 72 hearing aids were fitted. Two Pre-School Language Development Classes were taught and 81 children received speech therapy in half-hour sessions.

The Arkansas Child Development Center, another special project of the Division, provides medical, psychological and social evaluations of children suspected of mental retardation. Four hundred sixty-three children were evaluated.

Physicians in private practice, hospitals, County and City Health Departments, schools, official and voluntary agencies and private citizens may receive Nutrition Service upon request. Direct Nutrition Service was given in clinic and home visits to patients receiving other Health Department services, or referred by physicians in private practice for consultation on modified diet, and in group teaching in formal and informal classes.

In implementation of the Programs of the Divisions of the Bureau of Local Health Service throughout the State, THE DIVISION OF PUBLIC HEALTH NURSING admitted 54,944 individuals to nursing service. Visits made to patients in their homes and in offices of the County and City Health Departments total 141,204.

There was an enrollment of 5,044 women in the Family Planning Clinics and 5,629 women were given nursing services in Maternity Clinics. Three hundred four Midwife Classes were taught and 173 supervisory visits were made to the midwives in their homes.

Public Health Nurses gave 81,190 tuberculin skin tests and 3,192 tuberculosis patients received service on an out-patient basis. Many were seen daily to be given injections.

In the Immunization Program, 466,909 series were completed. (In certain instances, only one injection was required to complete a series; in many others, two or three injections were required.)

THE BUREAU OF LABORATORIES provided a wide variety of laboratory services to physicians, clinics, laboratories and hospitals throughout Arkansas, and to the many Divisions of the Arkansas State Department of Health. The past year was marked by the Bureau's move into its new, modern, consolidated facilities; the award of a Federal Grant for $111,860.00 for development of a program of clinical laboratory improvement; three changes in the Laboratory administration.

The number of specimens received, and the number of tests run, reveal an increase of 10 and 11 percent respectively over the preceeding year. The spectacular increase in the number of FTA-ABS tests for syphilis (489 percent) run on diagnostic problems shows the value of this method, although it is expensive, time-consuming and hard on the eyes of technicians running the tests. Sizeable increases in workload were noted in the areas of Enteric and Special Bacteriology, Phenylketonuria (PKU), Water Bacteriology, Parasitology and Non-Syphilis Serology, the latter item increasing by 254 percent.

The Bureau did 18,819 Premartial Syphilis Serologies. The 126 approved laboratories for premarital tests required 18 on-site inspections.

The various Laboratories in the Bureaus ran 324,343 tests on the 178,769 samples received.

THE DIVISION OF ENGINEERING reviewed and approved 783 plans on public water utilities, public sewerage systems, swimming pools, cemeteries and other miscellaneous environmental control installations which represented an estimated expenditure of $16,800,000.00. Thirty-six new water supply systems, eight new water treatment plants, 11 new sewerage systems and 10 new sewerage treatment plants were constructed and placed in operation.

An annual three-day short school and eight special twenty-hour training courses for 650 water utility and waste water operators were taught to prepare these operators for license examinations.

The Division supervised maintenance and operation of 418 public water supplies and 212 public sewerage systems; certified water supplies for interstate carriers and food processing plants; investigated damage to water and sewage facilities in flood and tornado disaster areas.

THE DIVISION OF FOOD AND DRUG CONTROL, in conducting a program designed for protection of the consuming public, rendered direct services in sanitary inspections and investigations of bakeries, bottling plants, wholesale groceries, canning plants, food service establishments, food stores and markets, locker plants, school cafeterias, food salvagers, retail fish markets, wholesale drug houses, retail pharmacies, hospitals and nursing homes and poultry and rabbit dressing plants.

Three hundred forty-three new food handling establishment building plans were reviewed and approved and inspections were made in the 37 counties having no Local Health Department Sanitarian.

Six wholesale narcotic permits were issued and 16,816 copies of narcotic order forms were processed for the 2,789 narcotic drug registrants. Fourteen narcotic drug thefts were reported in which 8,726 unit doses of narcotic drugs were stolen, as proved by the 83 investigations and 21 drug audits.

Items destroyed or removed from trade channels as adulterated, misbranded or otherwise unfit for human use included 240,132 pounds of food, 112,216 unit doses of drugs.

THE DIVISION OF MILK AND DAIRY PRODUCTS promotes, supervises and conducts surveys, studies and evaluations of local sanitary conditions and services in the field of milk sanitation; reviews and approves plans and specifications for new milk processing plants and receiving stations.

Nine hundred seventy-six establishments were licensed.

The Division inspected milk plants, dairy farms, retail raw dairies, single service plants, pasteurized transfer stations, counter freezers, milk condensing plants and/or depots, cheese plants, creameries, ice cream plants and receiving stations.

Official samples collected total 3,403. They included frozen desserts; pasteurized milk and milk products; producer, storage and raw surge samples; producer samples taken on farms; containers collected for sterility tests; farm water, plant water, truck and Bio-Assay samples.

Eight hundred ninety-seven tests were made on equipment; 1,055 sediment tests were run on milk.

In THE DIVISION OF MEAT INSPECTION, employment and training of graduate Veterinarians and Inspectors for the Meat Inspection Program were conducted on schedule, as programmed in May of 1968, utilizing the Federal Slaughter Inspection Center at Fort Worth, Texas; Federally inspected establishments in Arkansas, and the Processing Inspection Training Facilities of the Division of Meat Inspection of the Arkansas State Department of Health.

Three full-time graduate Veterinarians were employed to fill the fiscal year quota for District Supervisors. Twenty-one Veterinary Practitioners were trained as Finaling Consultants; 39 additional Inspectors were trained and placed in plants throughout the State. Thirty-four plants were brought under full-time inspection; 38 additional plants were being phased-in toward full compliance. Final-type surveys were conducted on 124 plants throughout Arkansas.

By June of 1969, the quantity of meat and meat food products inspected and passed totalled 78,670,530 pounds; 609,314 pounds have been condemned by the Division since commencement of actual inspection in the first plant on October 21, 1968.

Activities of THE DIVISION OF RADIOLOGICAL HEALTH primarily have concentrated on registration and inspection of X-ray machines and compliance inspection of radioactive material licenses. As or July 1, 1968, there were in effect 214 licenses and 193 licensees.

In addition to routine environmental surveil-

lance programs previously established, a pre-operational program was initiated for Arkansas Nuclear One at Russellville, Arkansas. A network consisting of approximately 20 sampling stations provides for collection of a variety of sample types indigenous to the Arkansas Nuclear One environment. Four hundred eighty-two radiological environment samples were analyzed.

In the Food and Drug Chemistry Laboratory, 428 samples were received and 2,553 analyses were made; in the Water Chemistry Laboratory, 647 samples were received and 5,257 analyses were made.

In the Calibration and Maintenance Laboratory, 99 monitoring stations were established to bring to a total of 1,219 the number of monitoring stations in use; 26,258 instruments and 2,187 kits were inspected; 792 instruments were repaired; 3,812 instruments were calibrated.

THE DIVISION OF HEALTH MOBILIZATION develops plans and programs covering all aspects of non-military health services and health resources with respect to all conditions of national emergency and local disasters. The specific areas of activity are Emergency Medical Stockpiling, Emergency Planning and Medical Self-Help Training.

Staff members inventoried, inspected and reported on rotation and storage situation of the 23 Hospital Reserve Disaster Inventory Units located in the State, and completed inspection and inventory of the 16 Packaged Disaster Hospitals in Arkansas. Six Packaged Disaster Hospital familiarization and orientation exercises were conducted.

There is close liaison between the Division, the State Civil Defense Office and the Arkansas Hospital Association in assisting local communities in developing Emergency Health Service Plans.

The Cardio-Pulmonary Resuscitation Program was presented to selected groups in which 654 individuals participated. The total number now trained is 2,459.

Requests for assistance and information from THE DIVISION OF VETERINARY PUBLIC HEALTH originate with physicians, veterinarians, other individual citizens, County and City Health Departments and other government agencies.

Arkansas had 48 known cases of rabies in animals during fiscal year 1969. Twenty-six of the cases were in skunks.

During the period covered by this Report, 1,145 animal bites to people were reported. The Arkansas State Department of Health has provided at cost to County and City Health Departments 2,119 doses of anti-rabies vaccine for administering to individuals exposed to rabid or suspected rabid animals.

During fiscal year 1969, anti-rabies vaccine injections were given to 143,897 pet animals in Arkansas in a concerted effort to control the disease in pets and to protect further the owner and the public.

THE DIVISION OF PLUMBING reported that, despite a slight decrease in the number of licensed plumbers and a marked decrease in plans reviewed, the City Plumbing Inspector Training Program expanded and improved. Six cities adopted the State Plumbing Code and the program was strengthened in two more cities.

THE DIVISION OF SAFETY has the responsibility of administering the Licensure Program for ambulance drivers, attendants, dispatchers and vehicles. A three-day course for ambulance personnel was developed and training was conducted for approximately 100 individuals who represented a variety of emergency care participants.

One application for Federal funds to implement an ambulance service was approved. This Project represents Federal participation to the amount of $17,000.00 from the National Highway Safety Bureau.

THE DIVISION OF PUBLIC HEALTH EDUCATION is charged with the responsibility of reviewing and distributing health education materials, films and exhibits to County and City Health Departments for educational purposes.

In the direct Dental Care Program of THE BUREAU OF DENTAL HEALTH, 1,175 children and adults in low income families received emergency and corrective care. To date, 93 Arkansas communities, with a combined population of 780,000, are fluoridating their water supplies. Recent surveys show the reduction in dental decay in children to be as high as 65 percent in many fluoridated communities.

Report from AMA Delegate

C. C. Long, M.D.

This is a report of the delegates to the A.M.A. The delegates, Dr. Jack Kennedy and Dr. C. C.

Long, attended the session of A.M.A. in New York City July 13-17, 1969. They also attended a clinical session in Denver, Colorado, November 30 to December 3, 1969. At the New York session, the House of Delegates considered 130 resolutions as well as reports from the various commissions and committees. They heard an address by the Vice-President of the United States, Spiro Agnew, and also an address by the Assistant Secretary of Health under the Bureau of HEW, Dr. Roger O. Egeberg. At the New York meeting, a great deal of national significance was attracted by the intrusion into the initial session of the House of Delegates of uninvited guests representing students in the New York area. I feel that the general tone of the House of Delegates was such that this will be the last time there is such intervention and disruption of the activities of the House.

The various reference committees considered the 130 resolutions which had been submitted to the House in this meeting. They covered all facets of medicine, medical education, Medicare, the roll of the A.M.A. as representing organized medicine. It is impossible to summarize these actions. It is likewise impossible for the two delegates from the State of Arkansas to attend all of these reference committees and enter into all of the discussions. As many as possible were listened to, comments made and questions asked. One of the major important issues seemed to be that the House of Delegates directed the Board of Trustees to form a planning committee which would plan the action and course that will be taken by the A.M.A. in the future. Also, considerable time was spent in discussing the private practice of medicine and the role the A.M.A. should take in promoting this facet of medicine as contrasted to Government medicine, group medical practice, closed panel systems, etc.

Also, many resolutions regarding the Medicare program were submitted and discussed. The meeting in Denver on November 30 to December 3 was similar in nature to the New York meeting. There were only approximately 60 resolutions brought in at the Denver meeting. I feel that there were three major areas of discussion at this meeting. The first concerned utilization and peer review, to which a whole day prior to the formal opening of the meeting was devoted. In this session, techniques, procedures and results of the review mechanism were discussed and demonstrated. The second thing, not necessarily second in matter of importance, was the report on planning and development. This consisted of approximately sixty pages, listing some eighteen groups of recommendations totaling fifty-seven in number, and a minority report by one member of the committee offering nineteen recommendations with suggestions that this was only a partial list. The House considered these reports and made the following recommendations:

1. That a permanent Committee on Long Range Planning and Development be appointed.
2. That the report of the Committee on Planning and Development, known as the Himler Report, and the minority report known as the Budd Report, be furnished to all of the State Societies for their consideration and recommendations and that they be brought before the appropriate reference committee at the annual meeting in Chicago in 1970 for their further action.

I heartily recommend to each member of the State Society that he avail himself of these reports and give them close study, as this is one of the most important actions taken by the House of Delegates; and the future course of medicine may well be guided and directed by the plans as they are put into effect by the Board of Trustees and the Association.

The third most important thing had to do with medical manpower, and the discussions centered around the training of physicians and assistants. There were many other matters discussed with continuation of discussions that have been carried on at previous meetings in the House. I feel that that represents a few of the items that were brought out. I wish it were possible for all members of the State Society to attend one of these National Meetings and see the work of the House and realize the complexity and difficulty in reaching wise and just decisions.

Summary of Actions
House of Delegates
American Medical Association
23rd Clinical Convention
November 30-December 3, 1969
Denver, Colorado

Jack W. Kennedy, M.D., Delegate

This is a summary that covers many of the subjects considered by the House during the Denver

meeting. This is not a complete report nor is it intended to be such but a report in helping in understanding actions taken by the House during the Denver session.

The House considered ninety-nine items of business, twenty-two reports from the Board of Trustees, three special reports, one from the Council on Constitution and By-Laws, five from the Council on Medical Education, two from the Council on Medical Service, sixty-six resolutions — five of which were memorials, during its nine hours and thirty-three minutes of formal sessions. We also heard the report of Gerald D. Dorman, M.D., president of the American Medical Association; voted the A.M.A. Distinguished Service Award for 1970 to Henry Bockus, M.D., Professor of Medicine Emeritus of the University of Pennsylvania School of Medicine and chose John S. Millis, Ph.D., president of Western Reserve University, Cleveland, Ohio, the 1970 Citation of a Layman for Distinguished Service.

Carroll Witten, M.D., Louisville, Kentucky, was elected to the Council on Constitution and By-Laws to fill the vacancy of James M. Kolb, Sr., M.D.

Sam W. Darley, M.D., Denver, Colorado, received the First Distinguished Service Award of the American Board of Family Practice.

The House gave a standing ovation to the remarks of Captain James Lovell, Command Pilot for Apollo 13 and chairman of the President's Commission on Physical Fitness and Sports.

A summary of the proceedings is as follows:

1. President's address, Gerald D. Dorman, M.D. Some of the highlights of the remarks made by President Dorman were:
   (a) the A.M.A. can serve the best interests of physicians only when we serve those of the patient first;
   (b) we are banded together to make ourselves more effective physicians so that we can serve our patients better;
   (c) the A.M.A. must become, and prove to the public through visible action that it has become, more a patient-oriented organization. The highlight of the speech was Dr. Dorman's statement that "The A.M.A. must find ways to attract medical students, interns, residents and other young physicians into the organization." He also added, "We need to face up realistically to the fact that we do not like the criticism of some of the younger members and would-be members of our profession and perhaps we don't approve of the leftward lean of some of their politics, but these young professionals are none the less much more patient oriented than some of us." In closing, he added, "We may have to alter certain of our cherished traditions, pompous A.M.A. goals; we must be prepared to accept and support totally new ideas, whether we devise them or they are devised by somebody else, provided they work well after adequate trial." One important phase of the speech was the health care of the poor in developing a health care task force.
2. The House adopted a statement of policy that (1) the medical profession must take the lead and actively support community effort to eliminate those conditions which personally affect health, (2) the health problems of the poor are basically community health problems and programs must be adapted to local needs, (3) health care of the poor should not be disassociated from but should be a vital part of the poor health care system.
3. The House adopted reports containing recommendations to: (1) increase physician services in urban areas; (2) support medical school scholarships; (3) increase health service careers by increasing recruitment from the disadvantaged area; and (4) increase attention of medical school administrators to all aspects of community medicine; (5) development of educational materials for disadvantaged people of things that reflect their cultural backgrounds and living conditions; and (6) w i d e r dissemination of family planning, counseling and supplies for those who want them.
4. Planning and Development. The House accepted a report of the Board of Trustees which announced the formation of a committee for program priorities to work closely with the finance committee to evaluate present and future utilization of resources of the A.M.A. The first step taken was to establish an ad hoc committee on Long R a n g e Planning and Development. Membership is nine and appointed as follows: one from Board of Trustees, five from House, one from

Student A.M.A. and two from A.M.A. membership at large. After the Long Range Planning Development Committee had met and recommendations were made, majority and minority reports of the committees were sent to societies of each state.

5. Statement on marijuana. Summary of the statement indicated that marijuana was a dangerous drug and, as such, a public health concern. Sale and possession should not be legalized and the handling of offenders should be individualized and additional research on marijuana should be encouraged and the A.M.A. should continue its program of education to all segments of the population on the use of marijuana.
6. Private practice of medicine. The following action was taken by the House in response to a report and two resolutions:

   Whereas, the private practice of medicine is still believed to be the best method of serving mankind's medical needs; and there is no specifically designated method in organized medicine for the promotion of private medical practice,

   Therefore, Be It Resolved, that the House of Delegates establish a Committee on Private Practice, which shall consist of nine active members of the Association and be constituted as a standing committee of the Council on Medical Service, a council of the House of Delegates.
7. Medicine and Government. The House affirmed its support of the concept of regional medical programs as enacted in Public Law 89-239 and urged members to help guide regional medical programs in line with the highest tradition of the private practice of medicine. The House expressed its "firm opposition to on-site auditing in physicians' offices of tax-supported programs by representatives of governmental agencies" and urged that problems between physicians and intermediaries or between physicians and government agencies be referred to local peer review committees.

   The House also reaffirmed the A.M.A.'s official position that it will help federal agencies in "their quest for physicians who are errant in their participation in providing medical services to Medicare and Medicaid patients."
8. The House opposed federal phyiscian licensing and encouraged state medical societies to work with their state legislatures to streugthen state laws, if necessary, to better control the few physicians who would tarnish the image of the whole profession.
9. Urged that the A.M.A. confer with federal agencies concerning feasibility of the government's annual publication of a compendium of federal laws applicable to health and medicine, with the rules and regulations of administrative bodies pertaining to them.
10. Opposed legislation requiring the filing of information reports by insurance carriers of other third party payers of payments made to patients, since the reports would not necessarily indicate what, if any, payments were made to physicians.
11. Also adopted a report opposing the establishment of a School of Health Sciences under the auspices of the Department of Defense stating that the granting of professional and academic degrees should remain within the purview of educational institutions and not become the prerogative of the federal government.
12. Cost of Care. The House expressed deep concern over ever-increasing costs of hospital care services, and resolved that the A.M.A. Board of Trustees request the American Hospital Association to join with it in urging hospital boards and hospital medical staffs to develop and institute cost control measures for hospital care services. The House also reaffirmed its endorsement of the tax credit plan of medical care coverage for persons in the United States. The A.M.A. also urged the council and committees to intensify efforts to develop realistic and effective plans of medical care coverage available for all persons, utilizing multiple methods of financing and free choice of mechanism based on adequate standards of coverage.

    The House also urged the state medical societies to submit promptly any other realistic proposals which they believe should be developed as A.M.A. proposals for effective, widely available medical care insurance or prepayment plans.

    There was also some discussion on the meaning of the terms "health care" and "medical care" since the federal government

routinely blames the medical profession for the rising costs of health care and some physicians and even the publications of the American Medical Association use the erroneous expression "health care" when they should use the correct term "medical care". The House resolved that the Board of Trustees initiate, promptly, remedial measures to clarify the meaning of the expressions "medical care" and "health care" and to assure their correct usage in all official publications of the A.M.A.". The Executive Vice President was instructed to design activities to correct the terminology of the lay press and enlighten the understanding of the public.

13. Strengthening the A.M.A.: President Dorman made several recommendations to the House on the methods of strengthening the A.M.A. membership and services — such as increasing membership from the Armed Forces, Veterans Administration, Public Health Service, State Department, and people of our country in various other countries and capitals of the world who are not eligible through membership in the county societies. It was also urged that state and county medical societies make available to interns and residents active membership or its equivalent and resolved that the Council on Medical Education and other bodies within the A.M.A. intensify their efforts to initiate additional meetings and encourage continuing dialogue with medical students, preferably in conjunction with local chapters of SAMA, interns and residents in their respective states.

Other resolutions adopted: (1) strongly urged the Council on Medical Education and the specialty boards to move forward with the acceptance of qualified osteopathic physicians into their training program and specialty board examinations; (2) suggested educational opportunities for students, interns, and residents be increased and that these trainees be exposed to the merits of practice under a variety of environmental circumstances.

The House also adopted guidelines for development of new health occupations; resolved that the A.M.A., state and local medical societies intensify their support of the private and public agencies in the fulfilling of their responsibilities in promoting environmental health; reaffirmed present policy on therapeutic abortion and rejected new resolutions by various states whereas medical abortions could be done upon demand.

House of Delegates Business Affairs

The resolutions, annual reports and other business items printed below are brought to the attention of individual members and the county medical societies. The items printed here represent those received in time for publication in advance of the meeting. All business items will be referred to reference committees. Open hearings by the reference committees are to be held on Sunday afternoon, April 26th, immediately following the session of the House of Delegates. All members of the Society are urged to participate in the open hearings of the reference committees. The reference committees want expressions of opinion from the membership.

Constitutional Amendments

The following proposed amendments to the Constitution and By-Laws were approved by the House of Delegates during the 1969 meeting. They will be presented to the House of Delegates for final vote at the meeting on Sunday, April 26th.

I. Amend By-Laws, Chapter VIII, Committees, Section 1 (A), by adding as standing committees:
   12. Committee on Aging
   13. Committee on Mental Health
   14. Committee on Continuing Education

II. Amend By-Laws, Chapter VIII, Committees, by:
   1. Deleting the words "and postgraduate work" from parentheses following listing of Committee 4 under Section 1 (A) so that it will read:
      4. Committee on Medical Education (Medical School)
   2. Deleting the words "study of the aging population through a sub-committee on aging" from Section 5.

3. Deleting the words "and postgraduate instruction" from the first sentence of Section 6.

III. Amend By-Laws, Chapter VIII, Committees, by:

1. Adding Section 13. Committee on Aging

   The Committee on Aging shall study the problems of the aged and the aging. It shall provide leadership and initiative in meeting the health and medical care requirements of older persons. It shall foster the development of effective methods of achieving the best possible social and spiritual atmosphere for the elderly.

2. Adding Section 14. Committee on Mental Health

   The Committee on Mental Health shall study the problems of the mentally ill. It shall foster development of programs to improve the care and treatment of mental patients and mental retardates.

3. Adding Section 15. Committee on Continuing Education

   The Committee on Continuing Education shall consist of ten members, one from each councilor district. The Committee shall exercise leadership and responsibility in continuing review of the system of graduate medical education. It shall foster continuous efforts to increase excellence in the system of graduate education to serve the cause of medicine and to assure the public of continuing improvement in the graduate training of physicians in practice.

IV. Amend the By-Laws, Chapter XI, to delete the words "Robert's Rules of Order" and substitute "Sturgis Rules of Parliamentary Procedure."

RESOLUTIONS

The following resolutions have been submitted for consideration of the House of Delegates:

Resolution on Medicare Guidelines From Union County Medical Society

WHEREAS, it has come to the attention of the Union County Medical Society that Blue Cross and Blue Shield, Inc., acting under Medicare Guidelines, has recently refused to allow medical expense claims in certain Medicare cases and has required specific itemization of the exact type of injected medication used in the treatment of some patients, and

WHEREAS, the method of implementation of this guideline is such that it places an undue and unfair imposition and burden on the patient to bear the responsibility of securing confidential medical information from their physician in order to in turn, disclose the type of medicine used to the Medicare carrier, and

WHEREAS, authority for revealing this information by the physician is considered by Medicare Services to be the general authorization signed routinely by Medicare beneficiaries on claim forms, and does not require a specific directive to the physician releasing him from possible ethical indiscretion in submitting the specific type of medication to a third party, and

WHEREAS, it has now been demonstrated by recent denial claims by Blue Cross and Blue Shield, Inc., that if the patient wishes his privacy protected and confidential information withheld, the reimbursement to him under the law would be disallowed, and

WHEREAS, it has also been demonstrated that a physician is to be denied payment for treatment on an assignment basis if he attempts to protect the patient's privacy at the patient's request, and

WHEREAS, the initial enforcement of this regulation is being done in a grossly discriminatory manner by requiring only a few individual physicians to comply, as well as producing harassment in the form of writing the term "investigated" across the letterhead of physicians' bills which had been returned to the patients for their consideration, thereby promoting doubt by the patient as to the physician's integrity, and

WHEREAS, The Union County Medical Society is alarmed that such action taken against two of its members represents a threat to the group as a whole in that it may become a universal practice, and

WHEREAS, an ethical dilemma now exists in regard to the physicians being required by Federal Guidelines to release professional and confidential medical information to non-professional insurance carrier personnel, even though this action constitutes an unethical act as defined by the medical practices act of Arkansas and can be the cause for revocation of a State Medical License, and

WHEREAS, patients had been notified of this requirement to itemize the specific medicines

used by injection, yet no prior announcement of policy in regard to these new guidelines had been given to physicians, and

WHEREAS, we realize that isolated cases of abusive charges by physicians had prompted these guidelines, we also recognize that usual and customary methods of procedure already exist through local medical grievance committees and the judicial system for the purpose of clarifying and judging these questions in regard to physicians' charges as they apply to patients and third party contracts, yet Blue Cross and Blue Shield, Inc., has not seen fit to utilize these usual standard mechanisms, and

WHEREAS, there is no stated policy implied or asserted in regard to the definition of "necessary" use of medication as stipulated in the Medicare law, and the continued enforcement of this guideline by Medicare carriers can only lead to the determination by non-professional third party staffs of what medications are medically necessary or indicated and thereby, through economic control, establish what would be allowed in the specific treatment of patients by physicians,

BE IT RESOLVED, that the Union County Medical Society hastens to protest strongly this action by Arkansas Blue Cross and Blue Shield, Inc., and considers it discriminatory harassment in its implementation, a threat to all physicians' integrity, an invasion of the patients' right to privileged information, subjecting of the physician to an ethical dilemma, and a threat to the established high standards of medical care by providing this means of dictatorial control over the patients' treatment by non-professional government authorities, and

BE IT ALSO RESOLVED, that the Union County Medical Society strongly urges the immediate withdrawal of such new guidelines from the Department of Health, Education and Welfare regulation and that difficulty in regard to abusive physicians' charages submitted to Medicare be handled through the established customary and usual routes of procedures which includes local medical grievance committees and the judicial system.

NOTE: The Council of the Arkansas Medical Society considered the above resolution from the Union County Medical Society and reaffirmed present Medical Society policy of cooperating with the fiscal administrators and government agencies to try to make these programs work with the least interference with the traditional aims and methods of the private practice of medicine.

Request for Action From Union County Medical Society

It is understood by the members of Union County Medical Society that the Arkansas Medical Society, by its constitution and by tradition, is limited in its jurisdiction over its members. As we understand it, the purpose of the Arkansas Medical Society is to promote and organize only scientific, educational and social activities. Therefore, we believe that the Arkansas Medical Society should not become involved in questions concerning fees charged to patients by its members. We believe that the Arkansas Medical Society should have no voice in the formation of fee schedules, enforcement of fee schedules, etc.

We, therefore, demand that the Arkansas Medical Society dissolve all present committees, composed of members of the Society, dealing with fees and fee schedules and appoint no such committees in the future and stop assuming responsibilities of making contracts for members of the Arkansas Medical Society with third parties as insurance companies, government agencies, etc.

The Delegation from Union County offers this as a motion before this body and if passed by this House, they expect that these instructions, as so listed above, will be implemented by immediate action by the officers of the Arkansas Medical Society.

Resolution on Participation in Usual, Customary and Reasonable Charges Program From Greene-Clay County Medical Society

WHEREAS, we are opposed to having fees set by an arbitrary organization differentiating various groups of doctors over the State, one against the other;

WHEREAS, standards as set forth would greatly detract young physicians from lesser populated areas;

WHEREAS, we feel that the State's physicians and physician organizations are effectively monitoring their own internal affairs relative to their economic community;

WHEREAS, we feel the physicians of Arkansas deserve and effectively are more flexible with in-

dividual cases than a central governing body can be;

WHEREAS, we feel that whether or not a patient has insurance, or less importantly with what company, is only incidental to the physician-patient relationship;

WHEREAS, we feel that the use of our voluntarily submitted confidential register of professional charges has been extended well beyond our understood purpose of it;

WHEREAS, we feel that a plan of this magnitude serves only to arrest the physician's niche in the free enterprise system only to the advantage of an expanding business organization;

WHEREAS, we feel that Arkansas physician submission to a program of this nature is a definite giant stride toward furthering socialized medicine;

We, the Greene-Clay County Medical Society, resolved unanimously at our regular meeting on February 12, 1969, to not be participating members with Blue Cross and Blue Shield or any other insurance company with a program of this nature.

Resolution on Mass Rubella Immunization

Resolution

From Pope-Yell County Medical Society

WHEREAS, there is available a live virus rubella vaccine which can be used with safety in children,

WHEREAS, the childhood population is now considered to be ripe for a rubella epidemic,

WHEREAS, the last rubella epidemic produced many thousands of defective babies as a result of maternal infection,

WHEREAS, successful statewide mass immunization of the susceptible age group would greatly reduce or prevent the expected epidemic,

WHEREAS, a statewide program with its attendant publicity would be more likely to succeed than local programs,

BE IT RESOLVED that the Arkansas Medical Society sponsor a statewide mass immunization of the appropriate age group children in the spring of 1970 and that the officers of the Arkansas Medical Society be instructed to implement such a program.

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April, 1970

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ARKANSAS MEDICAL SOCIETY
ARLINGTON HOTEL, HOT SPRINGS, APRIL 26 - 29, 1970

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Facts and Fancies Regarding Anomalies of Male Genitalia

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Although any congenital defect may seem to be catastrophic, deformities of the male genitalia have been especially disconcerting to parents, frustrating to physicians, and embarrassing to patients. Some inconspicuous abnormalities are not always recognized promptly. Frequently there is undue procrastination in the treatment of obvious genital anomalies. Occasionally, ill-advised initial therapy compromises all further therapeutic efforts.

Gratifying results usually can be obtained if appropriate corrective measures are employed at the most opportune time. The purpose of this presentation is not to dwell on technical details but merely to point up some of the highlights of what can be done for the unfortunate victims of these malformations.

The importance of appreciating certain therapeutic possibilities was emphasized in a letter from a young adult whose chordee and hypospadius were not treated until the age of 24 years. Admittedly, he is more discerning than the average patient for he now has a Ph.D. in chemistry and is affiliated with one of this country's foremost universities. The following excerpts from one of his letters should be a challenge to all clinicians:

". . . both mentally and physically the surgery worked out fine for me . . . (but) irreversible damage can occur if nothing is done early in life. . . . I also know that one cannot always depend upon physicians to discuss the issue with individuals or parents. . . . I was examined . . . by a dozen physicians . . . and not once did any of them really discuss my problem. . . . I forced myself to go to a medical library to find out for myself. . . . The public should be made more aware of both the condition and what can be done about it."

Before discounting the above as an isolated instance, consider further the hulking highway patrolman with classic chordee and hypospadias who remained untreated until he was 28 years of age. He had been tendered repeated condolences by the family physician, had been given the "brush-off" by the one urologist he had consulted earlier, and first became truly oriented regarding his anomaly through a sympathetic medical officer when he was discharged from active military duty.

In all probability there have been numerous comparable miscarriages of therapeutic justice. No doubt countless similar admonitions could be made concerning many congenital deformities. It is timely and important, therefore, to become better acquainted with such anomalies and to develop a "clinical conscience."

Meatal Stenosis

Urinary difficulty may be due solely to constriction of the urethral meatus (Fig. 1 *A*). Observation of the stream and inspection of the aperture should establish the diagnosis.

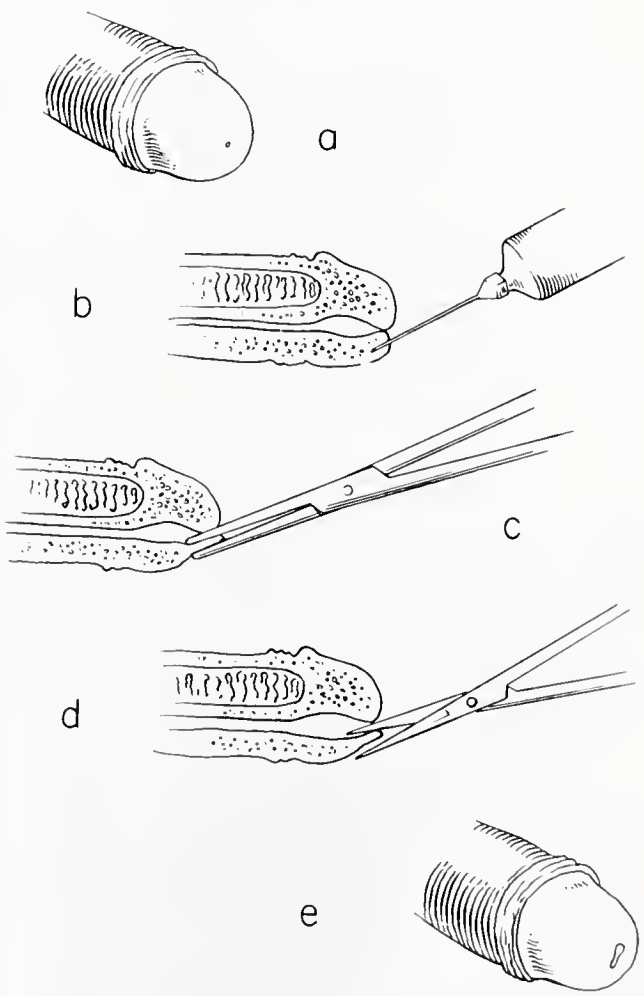


Figure 1.

Meatotomy for normally situated stenosis *(a)*. Posterior lip injected with anesthetic agent *(b)*, compressed with hemostat *(c)*, incised with scissors *(d)*, thereby enlarging the opening *(e)*.

* Rochester, Minnesota, Mayo Clinic and Mayo Foundation: Section of Urology.

Meatotomy for a normally situated meatus does not sacrifice enough urethra to create additional problems. Figure 1 illustrates a simple, bloodless technique adaptable to local anesthesia and to office practice, irrespective of the patient's age.

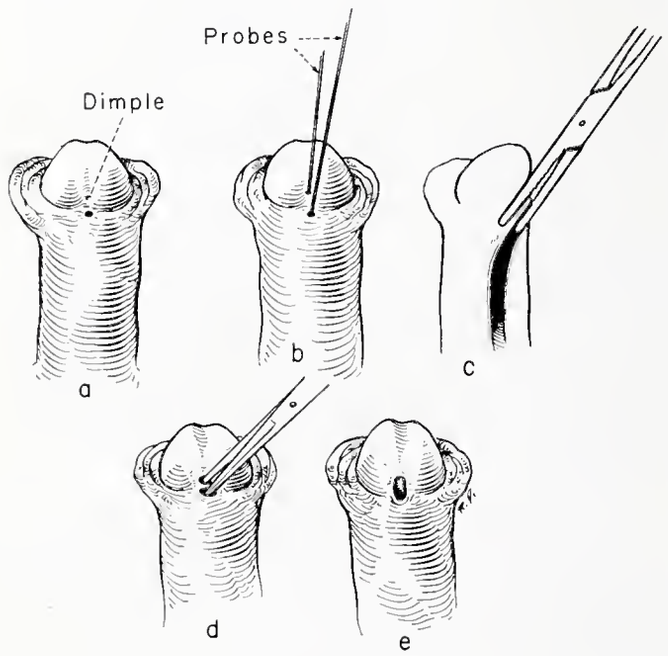


Figure 2.

Meatotomy for mildly hypospadiac constriction *(a)*. Distal opening or indentation communicates with short separate tract *(b)*. Intervening septum crushed with hemostat *(c)* and divided with scissors *(d)*. Meatus enlarged without sacrificing any normal urethra *(e)*. (From Culp, O.S.: Surgical Correction of Hypospadias. Trans. Amer. Ass. Genitourin. Surg. 49:57-70, 1957. By permission of the Williams & Wilkins Company.)

Occasionally the minute urethral orifice is mildly hypospadiac (Fig. 2 *A*). The conventional type of meatotomy will aggravate the degree of hypospadias sufficiently to necessitate some type of urethroplasty. These patients invariably have a more distal indentation which on probing is found to communicate with a separate, vestigial, terminal urethra that lies parallel to the one through which the urine passes (Fig. 2 *B*). By simply crushing (Fig. 2 *C*) and dividing (Fig. 2 *D*) the intervening septum, the original meatus can be enlarged without sacrificing any of the useful urethra (Fig. 2 *E*). Since the meatus remains in satisfactory functional position on the base of the glans and is not associated with chordee, further surgical treatment is unnecessary. Construction of a glandular urethral segment is fraught with numerous hazards that more than offset any cosmetic improvement.

Penile Torsion

The penis may be rotated so that the glans faces laterally or anteriorly, but the most common form of torsion is 90° counterclockwise rotation associated with chordee and hypospadias (Fig. 3 *A*). Even so, it must be remembered that torsion can occur alone, with chordee only, or with epispadias, may be clockwise, and may present a twist of 180°.

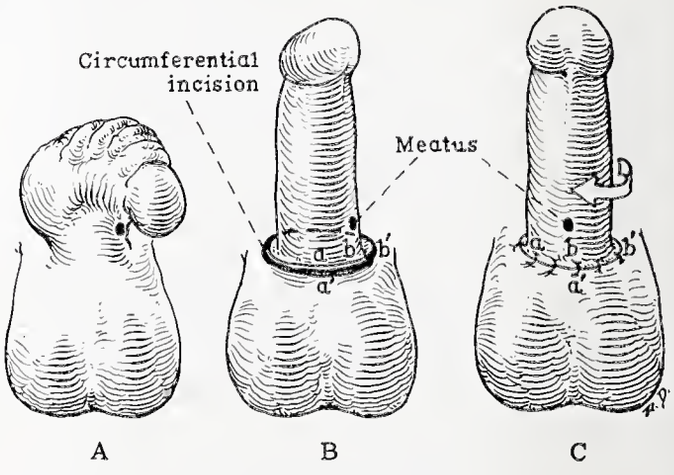


Figure 3.

A, Counterclockwise penile torsion with chordee and hypospadias. *B*, Glans still facing 3 o'clock position after correction of chordee. Deep incision around penoscrotal juncture. *C*, Appropriate counterrotation and reapproximation of tissues which correct the torsion. (From Culp, O. S.: Struggles and Triumphs With Hypospadias and Associated Anomalies: Review of 400 Cases. J. Urol. 96:339-351 [Sept.] 1966. By permission of the Williams & Wilkins Company.)

The incidence of torsion, detected during routine cystoscopy and unaccompanied by other genital deformities, has been a revelation once one became cognizant of the entity. Most of the patients were unaware of any peculiarity. They had encountered no inconveniences.

But if chordee had to be corrected, the glans usually continued to face the 3 o'clock position (Fig. 3 *B*). This often posed mechanical problems during any type of urethroplasty.

Circumferential incision, deep mobilization of the penoscrotal juncture (Fig. 3 *B*), appropriate counterrotation, and reapproximation of skin and fascia (Fig. 3 *C*) corrected the torsion in the 19 cases in this series that were accompanied by chordee (with or without hypospadias). It is wise to defer treatment of the torsion until at least 6 months after elimination of all chordee.

Chordee Without Hypospadias

Any time there is downward curvature of the penis a straightening operation is mandatory regardless of the location of the urethral meatus. Disastrous chordee may occur without associated hypospadias (Fig. 4 *A*). Too frequently this type of anomaly is neglected because the meatus is normally situated at the tip of the glans and there is reluctance to disturb the intact urethra.

Although others claim that they have been able to straighten the phallus at times by freeing

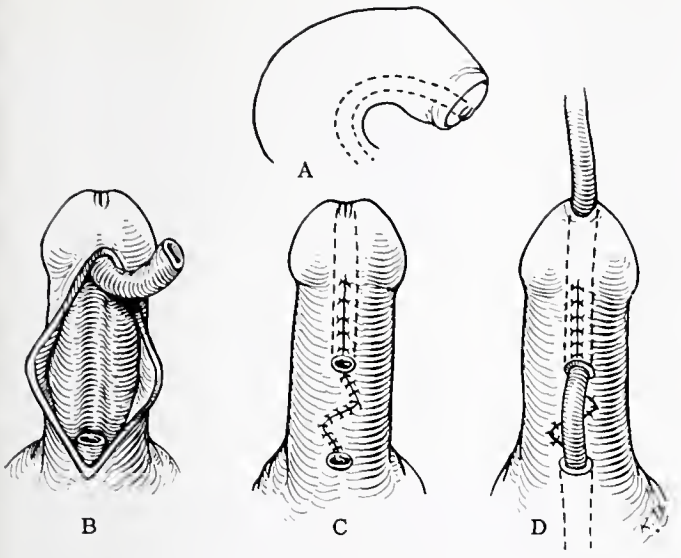


Figure 4.

A, Chordee without hypospadias. *B*, Short urethra transected just beyond penoscrotal juncture. Distal segment freed and corpora cavernosa denuded. *C*, Severed ends of urethra sutured to adjacent skin after diverting more skin to ventral surface by Z-plasty. *D*, Catheter left in both segments of urethra. (From Culp, O. S.: Experiences With 200 Hypospadiacs: Evolution of a Therapeutic Plan. Surg. Clin. N. Amer. 39:1007-1023 [Aug.] 1959. By permission of the W. B. Saunders Company.)

the urethra deep into the perineum or by taking "tucks" on the dorsal surface, the author's best results followed division of the urethra and temporary conversion to a hypospadiac status. In order to preserve the original meatus and as much distal urethra as possible, the urethra was transected at the penoscrotal juncture (Fig. 4 *B*). After the penis had been straightened, more ventral skin was obtained by some form of Z-plasty (Fig. 4 *C*). Additional urethra was constructed at a later stage to bridge the defect between the preserved urethral segments.

Chordee With Hypospadias

Chordee and hypospadias are more likely to occur concomitantly. Circumcision is contraindicated because this skin can be utilized during the plastic procedures. The degree of hypospadias may seem to be relatively mild but this always becomes more marked once the curvature has been corrected. It is wise to explain this to parents in advance.

Many operations have been devised for the correction of chordee. If the hooded prepuce is still intact, the simple technique shown in Figure 5 is preferred. If the patient has been circumcised or the initial straightening operation was unsuccessful, some form of Z-plasty is usually employed (Fig. 4). The ideal age for straightening is approximately 18 months. But most of the patients have not been presented for treatment until they were considerably older.

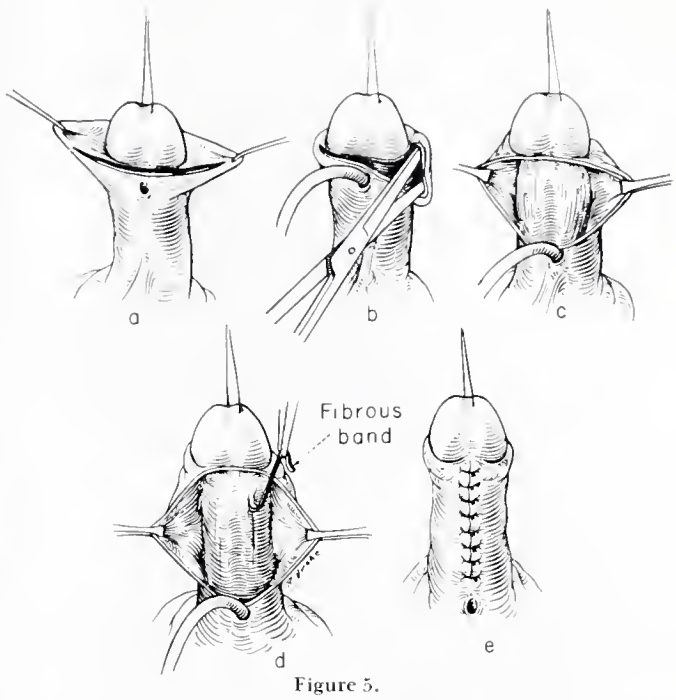


Figure 5.

Correction of chordee with hypospadias. *a*, Incision beyond meatus extended into hooded prepuce on each side. *b*, Folds of skin freed with blunt scissors after inserting indwelling catheter. *c*, Urethra freed and allowed to gravitate posteriorly. *d*, Constricting tissue removed. *e*, Skin diverted from hooded prepuce closed with fine Mersilene sutures. (From Culp, O. S.: Surgical Correction of Hypospadias. Trans. Amer. Ass. Genitourin. Surg. 49:57-70, 1957. By permission of the Williams & Wilkins Company.)

Too frequently the straightening operation is not viewed with sufficient concern. Initial efforts can be much too conservative. Nineteen per cent of the hypospadiacs seen at the Mayo Clinic during the past 18 years had had at least one previous unsuccessful operation for chordee. The most disillusioned individuals were those who had been subjected to urethroplasties (with varying degrees of success) despite residual chordee. Under no circumstance should new urethra be constructed until it is evident that the penis is straight, the new meatus is competent, and at least 6 months have elapsed since the last operation.

Once all chordee has been corrected, the urethral meatus may be located at any point on the shaft of the penis, but in three-fourths of the cases it will be at or distal to the penoscrotal juncture. In the penoscrotal type, new pendulous urethra is constructed over a catheter of appropriate size and then buried in the scrotum by a version of the method proposed by Cecil (Fig. 6). The urethra is freed from the scrotum after an interval of at least 2 months (Fig. 7).

If the urethral meatus is on the shaft and well removed from the penoscrotal juncture, the base of the penis can be left unattached (Fig. 8) and the second stage is greatly simplified. However, it is imperative to bury at least 1 cm of normal

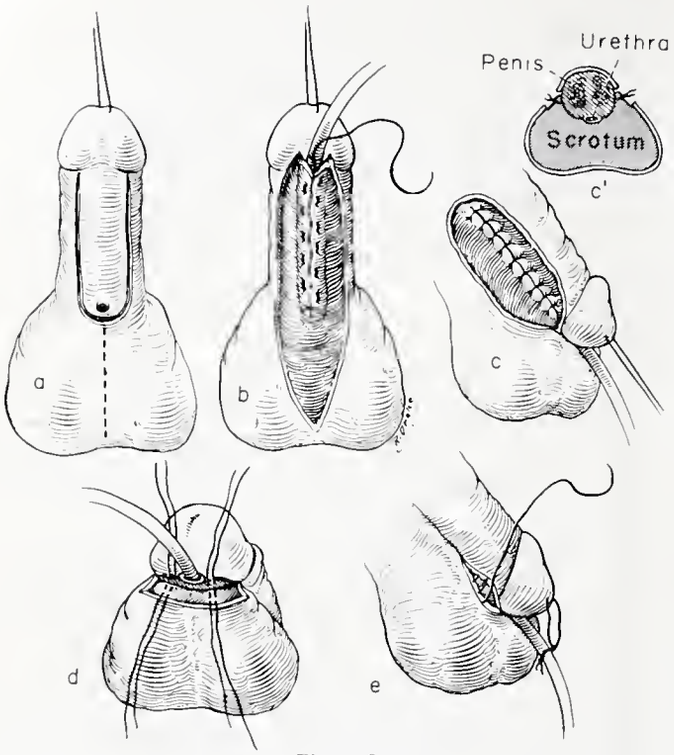


Figure 6.

Cecil-type urethroplasty for penoscrotal hypospadias. *a*, Strip of skin isolated for new urethra. Note location of corresponding incision in scrotum. *b*, New urethra constructed over indwelling urethral catheter with continuous 4-0 chromic catgut. *c*, Pendulous urethra buried in scrotum. *c'*, Scrotal tissue attached high on lateral aspect of corpora. *d*, New meatus reinforced with sutures through glans and scrotal skin. *e*, Penile and scrotal skin closed with subcuticular suture of 4-0 catgut. (From Culp, O. S.: Surgical Correction of Hypospadias. Trans. Amer. Ass. Genitourin. Surg. 49:57-70, 1957. By permission of the Williams & Wilkins Company.)

urethra, as well as the newly constructed segment, to avoid a fistula in the recess. These deliberate two-stage procedures are preferred because they have eliminated persistent postoperative fistulas which have been the nemesis of other types of urethroplasty.

If the definitive position of the urethral meatus after correction of all chordee is scrotal

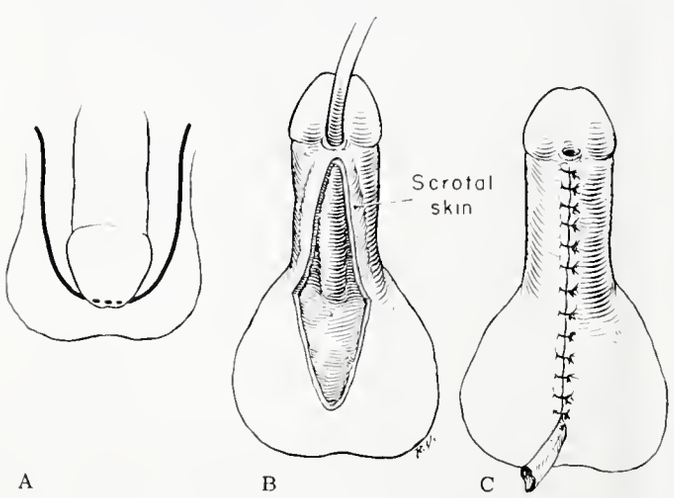


Figure 7.

Second stage of Cecil urethroplasty. *A*, Converging incisions in scrotal skin joined at new meatus. *B*, Urethra freed from scrotum with catheter or sound as guide. *C*, Skin closure using as much scrotal margin as necessary. Drain left in dependent portion of scrotum. (From Culp, O. S.: Surgical Correction of Hypospadias. Trans. Amer. Ass. Genitourin. Surg. 49:57-70, 1957. By permission of the Williams & Wilkins Company.)

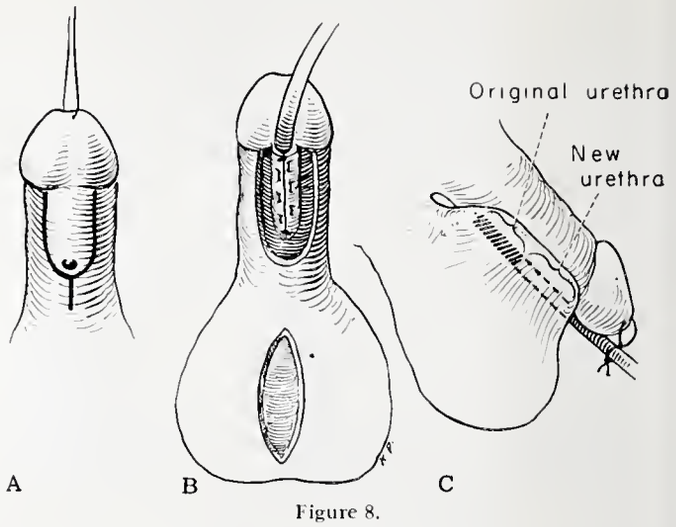


Figure 8.

Modified Cecil method for *(A)* penile meatus well removed from penoscrotal juncture. *B*, New urethra constructed over indwelling catheter and corresponding incision made in scrotum with preservation of penoscrotal region. *C*, Some of original urethra buried in scrotum along with newly formed segment but penoscrotal angle left unattached. (From Culp, O. S.: Surgical Correction of Hypospadias. Trans. Amer. Ass. Genitourin. Surg. 49:57-70, 1957. By permission of the Williams & Wilkins Company.)

or perineal, it is impractical to bury new pendulous urethra in juxtaposition to new scrotal urethra. A slight modification of the Denis Browne technique is employed (Fig. 9). By replacing the double-stop sutures of the original operation with Mersilene mattress ones placed around strips of 8-F rubber tubing the incidence of

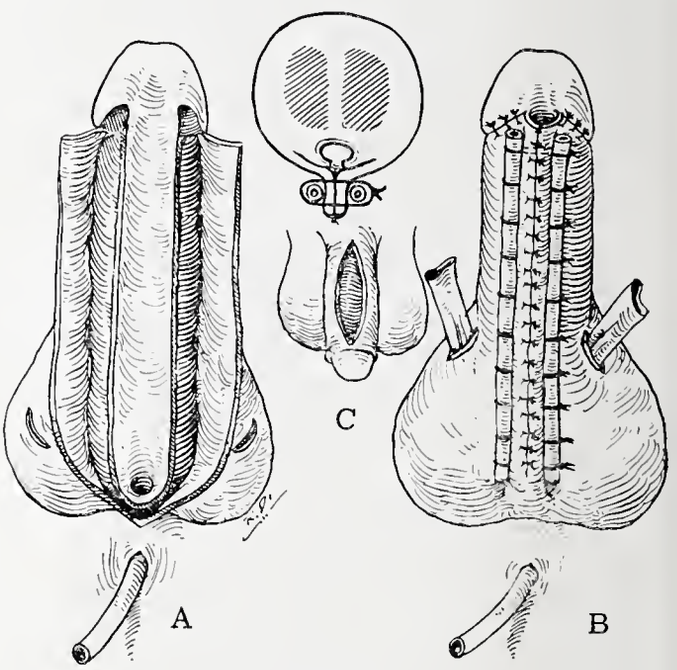


Figure 9.

Modified Denis Browne urethroplasty for scrotal or perineal hypospadias. *A*, Urine diverted by perineal urethrostomy, strip of ventral skin isolated, and lateral skin flaps freed. *B*, Through-and-through drain inserted via stab wounds at penoscrotal angle. Distal edges of lateral skin flaps advanced onto denuded portions of glans with fine catgut sutures. Flaps approximated over urethral strip with mattress sutures of fine Mersilene placed around strips of 8-F rubber tubing (see insert). Skin edges closed with 4-0 chromic catgut. *C*, Relaxing dorsal slit usually necessary. (From Culp, O. S.: Experiences With 200 Hypospadiacs: Evolution of a Therapeutic Plan. Surg. Clin. N. Amer. 39:1007-1023 [Aug.] 1959. By permission of the W. B. Saunders Company.)

pendulous fistulas was reduced from 30% to 15%. The scrotal segment always healed per primam.

Both Cecil and Browne types of urethroplasty are adaptable to individuals in all age groups. The ideal time is around 4 or 5 years of age. It is the inalienable right of every boy to be a "pointer" instead of a "sitter" by the time he starts to school.

Penoscrotal Fusion

Congenital union of penis and scrotum is uncommon but Figure 10 *A* is a classic example. Since there was no chordee and urethral meatus was situated at the tip of the glans, simple freeing comparable to the second stage Cecil-type urethroplasty (Fig. 7) sufficed. Circumcision was not necessary once the penis was mobilized.

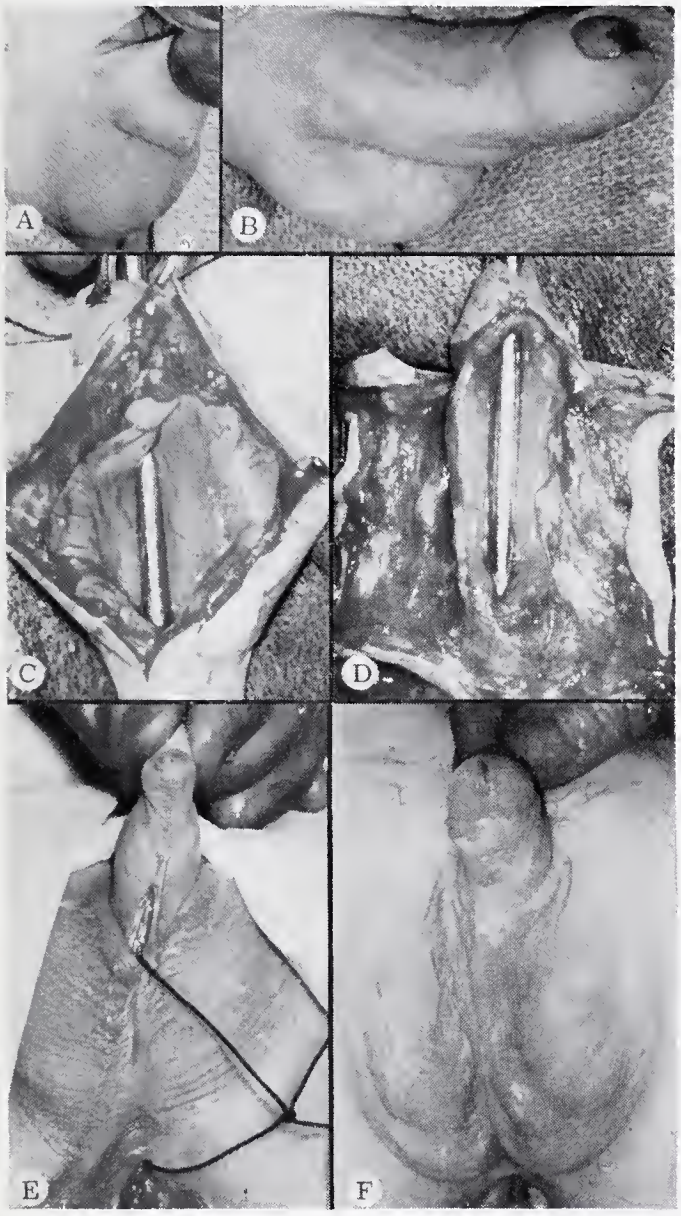


Figure 10.

A, Congenital fusion of penis and scrotum. Note excessive penile skin. *B*, Flail-like penis due to diverticulum of pendulous urethra. *C*, Diverticulum opened. Note normal proximal and distal segments of urethra. *D*, Portion of diverticulum retained for reconstruction of urethra. Note surplus of penile skin. *E*, Braided silk emerging from congenital penoscrotal and rectourethral fistulas. (From Culp, O. S., and Calhoon, H. W.: A Variety of Rectourethral Fistulas: Experience with 20 Cases. J. Urol. 91:560-571 [May] 1964. By permission of the Williams & Wilkins Company.) *F*, Same patient 4 years after closure of both fistulas during same operation. (From Culp, O. S., and Calhoon, H. W.: A Variety of Rectourethral Fistulas: Experience with 20 Cases. J. Urol. 91:560-571 [May] 1964. By Permission of the Williams & Wilkins Company.)

Urethral Diverticula

Congenital diverticula of the pendulous urethra are rare and especially so in the absence of distal strictures. But Figure 10 shows a bona fide example. The 6-year-old victim had a flail-like penis (Fig. 10 *B*) that swelled considerably with each voiding. Even so, his urinary stream was of excellent caliber.

The bulbous sac (Fig. 10 *C*), situated mid-shaft, was partially excised but sufficient wall was preserved (Fig. 10 *D*) to construct urethra of appropriate diameter in this region. This was buried in the scrotum, as described previously for penoscrotal hypospadias (Fig. 6). It was freed 3 months later (Fig. 7) and the subsequent retrograde urethrogram appeared normal.

Urethral Fistulas

Most fistulas in the anterior urethra are man-made but Figure 10 *E* shows a congenital defect in the penoscrotal region. The remainder of the pendulous segment was intact and the urethral meatus was at the tip of the glans. Further investigation revealed an associated rectourethral fistula. Both fistulas were closed successfully during the same anesthesia by combining perineal repair of the deeper defect with the anterior urethroplasty (Figure 10 *F*).

Rectourethral fistulas are usually suspected promptly in adults because they complain of passing urine per rectum and flatus per urethram. But early in life, mixtures of "wind and water" can be disgustingly elusive unless there is thorough investigation. They should always be suspected when there has been an imperforate anus. The rectum usually communicates with the prostatic urethra. Retrograde urethrography and urethroscopy should settle any doubts regarding possible rectourethral fistulas.

Intersex

Perineal hypospadias invariably is accompanied by other genital abnormalities. The scrotum usually is bifid and frequently it is empty. The penis often is diminutive. The urethra frequently terminates in a recess that resembles a vagina (Fig. 11 *A*). Even a well-developed phallus may not have a suspensory ligament and be partially concealed (Fig. 11 *B*).

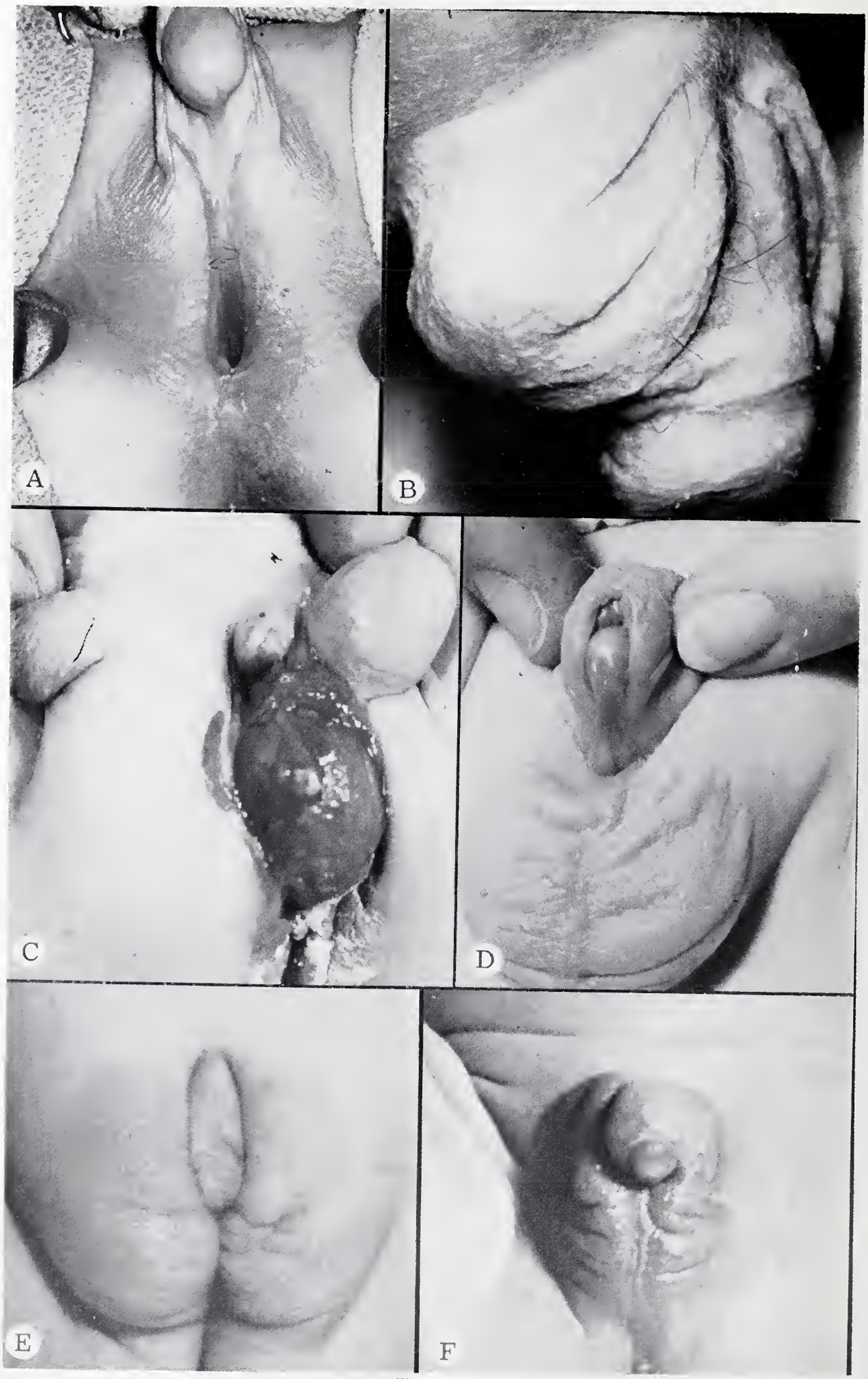


Figure 11.

A, Male with chordee, bilateral cryptorchism, perineal hypospadias, and vestigial vagina. *B*, Male with perineal hypospadias, bifid scrotum, well-developed penis, normal testes, but no suspensory ligament. *C*, Grotesque male with chordee, hypospadias, separate scortal compartments, and vestigial cloaca. *D*, Pseudohermaphrodite of questionable genetic sex. *E*, Female with adrenogenital syndrome. *F*, Female born of mother who received androgens during pregnancy.

Efforts to construct suspensory ligaments proved to be impractical. The suspended flaccid phallus became an extremely painful one when erect. Any ligament deficit is best ignored. Correction of the bifid scrotum during urethroplasty provides ample anterior placement of the penis.

Appearance of the genitalia of a bona fide male can be truly shocking (Fig. 11 *C*) but remedial. Even in less spectacular situations there can be serious doubts regarding the true sex of the child (Fig. 11 *D*). Female infants with congenital adrenal hyperplasia (Fig. 11 *E*) or females born of mothers treated with androgens during pregnancy (Fig. 11 *F*) may have external genitalia that resemble those of the male with perineal hypospadias and cryptorchism.

Infants with the adrenogenital syndrome are identified by a female type of buccal smear and increased amounts of 17-ketosteroids in the urine. They commonly have an associated defect in salt and water metabolism and are prone to have periods of vomiting, dehydration, and shock. Prompt hormonal therapy is necessary to compensate for the congenital adrenal defect.

There have been tragic instances in which an alleged hypertrophied clitoris was amputated early in life, only to have testes descend a few years later. Some children reared as boys have had chordee and hypospadias corrected only to be explored for undescended testes around the time of puberty and to be found to have female pelvic organs.

Today therapeutic injustices can be avoided. In most instances, buccal smears and related tests have eliminated the need of surgical exploration to establish the nature of internal genitalia. Furthermore, in most cases of true or pseudohermaphroditism, the vagina communicates with the urethra and can be demonstrated by urethroscopy or retrograde urethrography (Fig. 12 *A*). Decisions regarding the proper assignment of sex must depend on the structures available for establishing *functional* genitalia rather than on the genetic sex of the individual. Once the sex of rearing is established, ovotestes or contradictory gonads and internal genitalia should be removed.

Testicular Agenesia

Even though only one gonad is unaccounted for, associated hypospadias makes it prudent to biopsy the normally situated one and to explore the contralateral side before irreversible therapy has been instituted. An ovotestis may be found or the testis may be congenitally absent.

The undescended gonad may be situated almost anywhere between the kidney and the external inguinal ring. Difficulty locating it does not justify hasty conclusions regarding testicular agenesia. But this diagnosis becomes readily acceptable when an identifiable spermatic cord or vas deferens is found to end blindly (Fig. 12 *B*).

Seventeen per cent of the hypospadiacs had at least one side of the "scrotum" empty. It has been the author's policy to combine exploration of the inguinal canal and the retroperitoneal space (if necessary) with correction of chordee. As a result, some orchiopexies have been performed as early as 18 months of age. Others have been combined with various stages of urethroplasty.

Cryptorchism

Early surgical treatment of bilateral cryptorchism is now generally accepted. There is considerable evidence to support the claim that unless undescended testes are in the scrotum by the fifth year, most will be incapable of producing normal spermatozoa. Some testes proved to be dysgenetic and incapable of later spermatogenesis when explored at even younger ages.

Extrascrotal testes can occupy a variety of positions (Fig. 13). Some even vary their location by migrating freely and unpredictably between the inguinal canal and the scrotum. A single examination may not suffice. Any time the scrotal compartment is empty but well devel-

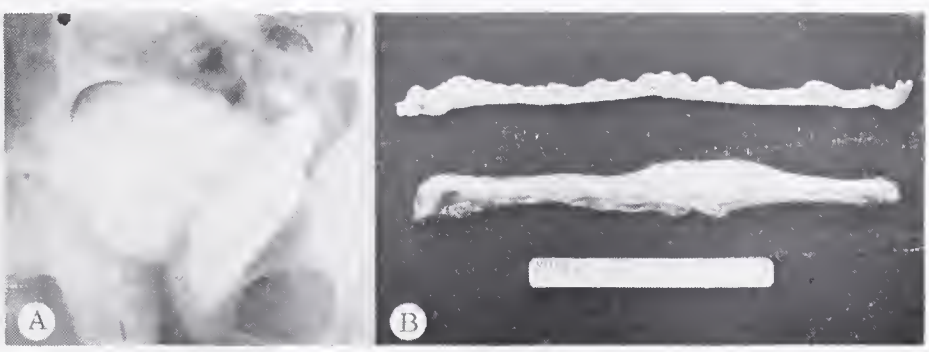


Figure 12.

A, Roentgenogram showing bladder on left and vagina on right in male pseudohermaphrodite. Vagina opened in the posterior urethra. *B*, True testicular agenesia with spermatic cord and vas deferens ending blindly.

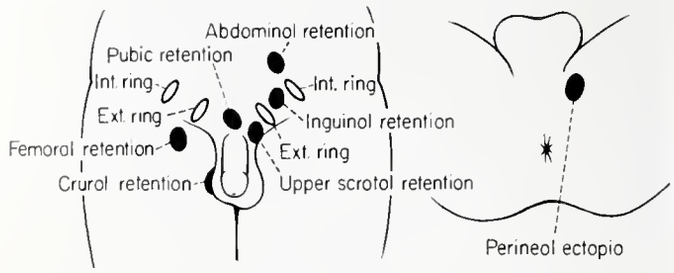


Figure 13.

Usual locations of maldescended testes. Note that the gonad will have to pass through the canal to reach several areas.

oped, this type of pseudocrytorchism should be suspected. It seldom requires operation.

One must also distinguish the *ectopic* testis that has traversed the inguinal canal but has failed to enter the scrotum from the *true cryptorchid* that is found within the canal or in the retroperitoneal space. Ectopia was responsible for 25% of the maldescended testes operated on at the Mayo Clinic during the past 18 years.

The most common site of testicular ectopy is over the inguinal canal beneath the superficial fascia (Fig. 14). Ectopic testes are especially vulnerable to trauma, have longer spermatic cords, are more normally developed, have a better

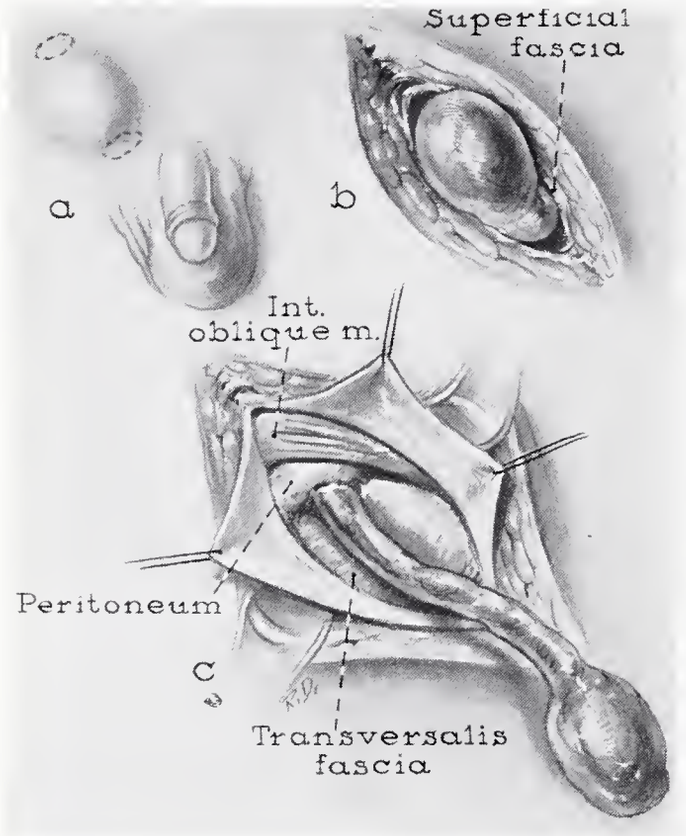


Figure 14.

a, Inguinal ectopic right testis situated over canal beneath superficial fascia. *b*, Exposure of testis showing reflection upward. *c*, Freeing of testis, opening of canal, and mobilizing of cord usually result in satisfactory orchiopexy without difficulty. (From Utz, D. C.: Surgical Management of Cryptorchidism. Surg. Clin. N. Amer. 39:995-1005 [Aug.] 1959. By permission of W. B. Saunders Company.)

prognosis, and have confused the existing literature on undescended testes. They are fixed and cannot enter the scrotum spontaneously, but can be placed in excellent position readily. Indeed, if there is no associated hernia, the inguinal canal may not have to be opened.

The true cryptorchid may have a short cord that precludes normal position despite extensive and meticulous dissection. Some writers have been enthusiastic about leaving testes with short vessels near the external inguinal ring and claim they have succeeded in advancing the gonad to the scrotum at a later stage. In the author's limited experience with this maneuver, "staged" orchiopexy succeeded only when there was overwhelming evidence that the initial operation had not been performed properly.

Brendler and Wulfsohn[1] have reported that short spermatic vessels can be divided completely (in properly selected cases) and the testis will remain viable if vessels accompanying the vas are preserved. If this technique proves to be reliable it should resolve at least some of the perplexing predicaments. But too frequently the vas and its vessels also are too short. Orchiectomy will be the procedure of choice in many situations if the other testis is normal. Furthermore, replacement in the retroperitoneal space will be prudent at times, especially when the status of the other gonad is unknown. It may be nonexistent.

To date, 85% of the maldescended testes could be placed in satisfactory scrotal position. To occupy a "satisfactory" position, the testis must be freely movable in the scrotum and not fixed against the external ring or the pubis. Not infrequently, painful testes in the latter locations have had to be removed.

Testes were placed in satisfactory scrotal position by employing high retroperitoneal dissection (Fig. 15 *A*) and by dividing the floor of the canal (Fig. 16 *A*). The latter was actually necessary in only one-third of the cases but some surgeons divide it routinely for convenience. Even though the internal and external rings are then joined (Fig. 16 *B*), no hernias have resulted. A true indirect hernia was present in 57% of the author's cases. This was repaired simultaneously in each instance.

The once popular two-stage Torek operation has fallen into disrepute because it often placed too much tension on the cord and resulted in testicular atrophy. It is safer to create an inelas-

tic scrotal pouch for the testis by dividing some of the resilient dartos fibers in the inverted scrotal wall (Fig. 15 *B*). This blister-like protrusion eliminates the natural tendency of the previously empty scrotum to push the testis upward. Gentle traction to the opposite thigh (Fig. 15 *C*) is employed only for 24 hours to keep the cord straight during the agitated portion of the postanesthesia recovery period. If one must depend on traction to keep the testis down, the operation is doomed to failure. Furthermore, *effective* traction would require a hip spica to prevent relaxing flexion of the leg.

There is no agreement concerning the indications for *unilateral* orchiopexy. Some writers insist there is no justification except when there is a symptomatic hernia. Nevertheless, most patients and parents are happier when both testes are accounted for, irrespective of their spermatogenic value. Occasionally this potential far exceeds the surgeon's expectations, especially if the testis proves to be ectopic.

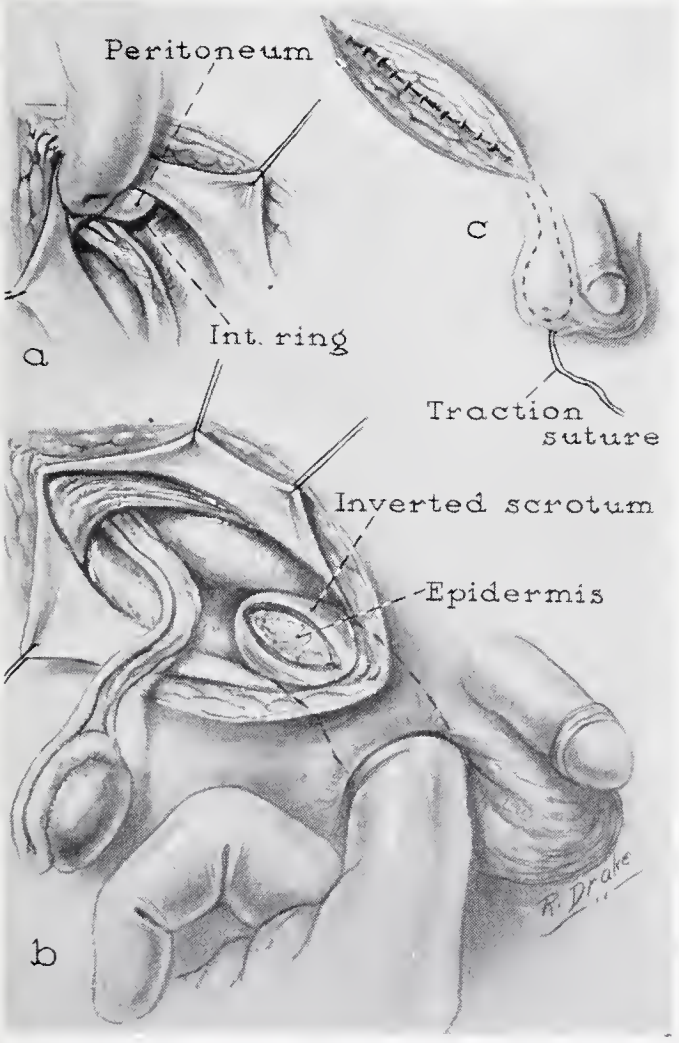


Figure 15.

Cardinal features of orchiopexy. *a*, Freeing spermatic cord retroperitoneally. *b*, Creation of inelastic scrotal pouch for testis by incising resilient dartos fibers in scrotal wall. *c*, Gentle traction from lower pole of testis to contralateral thigh during early postoperative period to keep cord straight. (From Utz, D. C.: Surgical Management of Cryptorchidism. Surg. Clin. N. Amer. 39:995-1005 [Aug.] 1959. By permission of W. B. Saunders Company.)

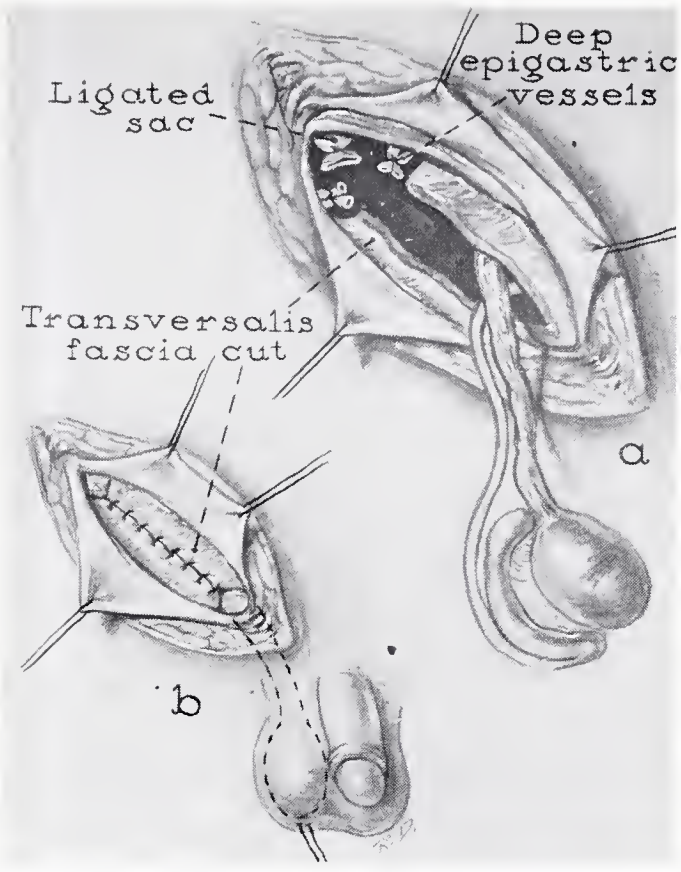


Figure 16.

a, Division of floor of inguinal canal and deep epigastric vessels to obtain more cord length and more desirable location of testis. *b*, Internal and external inguinal rings are joined. Same type of traction noted in Figure 15 employed. (From Utz, D. C.: Surgical Management of Cryptorchidism. Surg. Clin. N. Amer. 39:995-1005 [Aug.] 1959. By permission of W. B. Saunders Company.)

The alleged increased risk of malignancy in undescended testes is highly controversial and based primarily on statistical manipulations. Admittedly, intrapelvic testicular neoplasms usually have metastasized by the time they are detected. But so have many of the scrotal ones. Some tumors have developed in "pexied" testes long after the operation. Others have involved the normally descended testis while the "pexied" one was spared. Indeed, totally dissimilar neoplasms have been found in patients with bilateral testicular growths. Perhaps it is the dysgenetic testis that becomes malignant, irrespective of its location.

Unless the testis can be palpated within the canal it is unlikely that it will descend spontaneously. In 10% of the cases, the palpable mass that was thought to be testis proved to be only a hernia sac. Endocrine therapy is justifiable for only a brief period. It may forecast spontaneous descent as the boy matures, but for

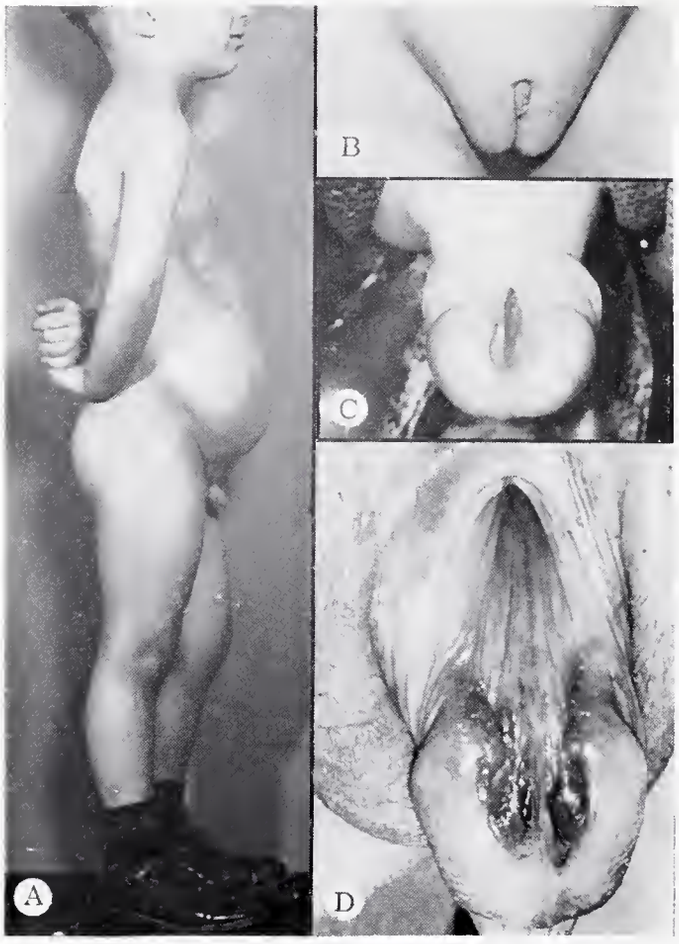


Figure 17.

A, Congenital defect of abdominal muscles with protuberance and wrinkled skin, often referred to as "prune belly." (From Greene, L. F., Emmett, J. L., Culp, O. S., and Kennedy, R. L. J.: Urologic Abnormalities Associated With Congenital Absence of Deficiency of Abdominal Musculature. Trans. Amer. Ass. Genitourin. Surg. 43:120-132, 1951. By permission of the Williams & Wilkins Company.) *B*, Male with true hypogenitalism. *C*, Glandular epispadias. *D*, Complete pendulous epispadias.

the author it has been disappointing and has been virtually abandoned.

Prune Bellies

Occasionally bilateral cryptorchism is accompanied by variable degrees of absence of abdominal musculature. The wrinkled appearance of the anterior abdominal wall has led to the descriptive appellation "prune belly" (Fig. 17 *A*). All of these patients have some degree of vesical neck obstruction. This takes priority over the empty scrotum because the secondary damage to the upper urinary tract frequently is so severe that renal reserve already has been depleted. Prompt urinary drainage is obligatory any time one sees this combination of anomalies.

Hypogenitalism

Most parental concern regarding the size of a child's penis is unfounded. Injudicious administration of hormones can be deleterious and never should constitute an appeasement policy.

On the other hand, some bona fide males with multiple genital anomalies have true hypogenitalism (Fig 17 *B*). It must be realized that these are complex endocrine problems that require detailed study by specially qualified clinicians. Some situations are so refractive to conventional measures that consideration may have to be given to altering the sex of the child.

Epispadias

When the urethral defect is on the anterior surface, the resultant epispadias may be relatively mild (Fig. 17 *C*) but most commonly it involves all of the visible penis (Fig. 17 *D*). New urethra can be constructed from the exposed mucosa (Fig. 18 *B*) and buried between the apposed corpora cavernosa (Fig. 18 *C*). This can create a normally functioning appendage *if the patient already has urinary control.*

But almost 50% of these unfortunates have complete or partial incontinence of urine due to faulty or absent vesical necks and urethral sphincters. Simple endoscopy will reveal promptly the nature of the vesical neck. It may be

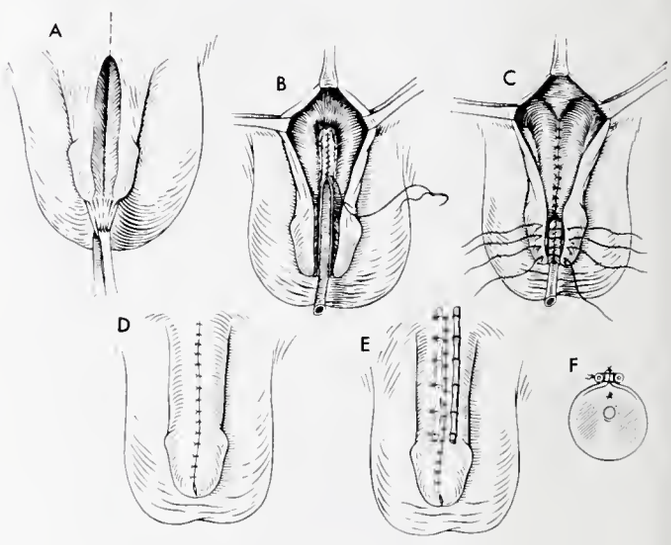


Figure 18.

Urethroplasty for epispadias. *A*, Most common form of the deformity. *B*, Urethra constructed from isolated strip of mucosa by using continuous 4-0 chromic catgut suture. *C*, Corpora cavernosa and glans sutured over new urethra with 3-0 catgut. *D*, Simple closure of skin. *E*, Skin closure utilizing nonabsorbable mattress sutures placed around strips of 8-F rubber tubing. *F*, Cross section of resultant approximation of skin edges.

normal, patulous, or nonexistent. Indeed, the verumontanum may be within the bladder. The futility of trying to "train" a child with this type of defect becomes obvious. Less severe degrees of the deformity may be more difficult to evaluate clinically, especially when the patient is only partially incontinent. Surgical treatment of the external anomaly should be deferred until there are no doubts regarding the status of urinary control.

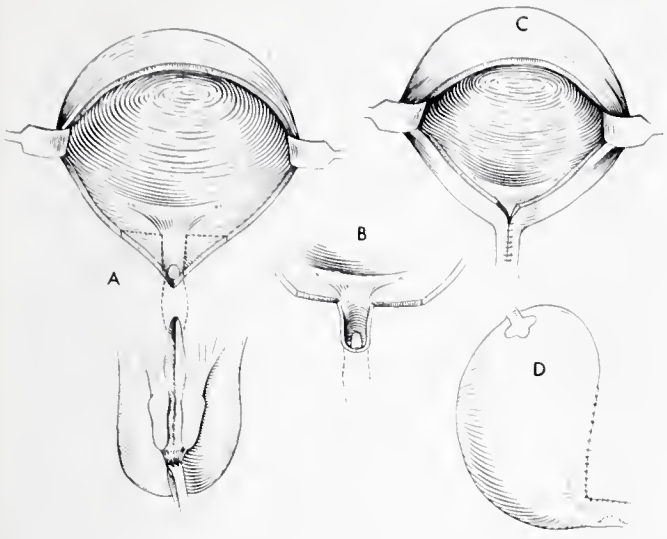


Figure 19.
Construction of a vesical neck. *A*, Location about midway between intravesical verumontanum and interureteric ridge. *B*, Strip of bladder isolated for extension of posterior urethra. *C*, Abrupt transition created between bladder and extended urethra with remainder of bladder closed vertically. *D*, None of the bladder per se is sacrificed.

Epispadiacs with true incontinence require construction of a vesical neck as the initial step. This is accomplished by creating an abrupt transition between the bladder and the extended posterior urethra approximately midway between the verumontanum and the interureteric ridge (Fig. 19). But doing so is not very practical before 3 years of age, because training a child who has never urinated normally requires unlimited patience and cooperation. Furthermore, postoperative appraisals must be accurate.

If urinary control is not complete after the first stage, it often can be improved by operations on the deep urethra. These are performed through the external defect, providing the epispadias has not been corrected. Some excellent cosmetic results on the penis have had to be taken down because they had been achieved prematurely and the patient was still incontinent.

Despite proper planning these can be most discouraging problems, for the results must be perfect. To be only slightly incontinent is comparable to being only slightly pregnant. But, fortunately, some patients with epispadias have perfect urinary control and construction of additional urethra need not be delayed.

Vesical Exstrophy

The most severe degree of epispadias accompanies exstrophy of the bladder (Fig. 20 *A*). Numerous efforts have been made to preserve the everted bladder; but inadequate capacity, persistent incontinence, and ureteral reflux have precluded useful function except in a few isolated instances.

Urinary diversion continues to be the most dependable treatment. Many types have been devised. None is foolproof. Variations of the ileal conduit have been gaining popularity but ureterosigmoidostomy is still employed frequently if the ureters are not too dilated. Improvements in techniques have added much to the efficacy of all types of diversion including ureterosigmoidostomy. However, it is wise to defer ureterosigmoidostomy until one can be certain about the competency of the anal sphincter. Before the age of 3 years, this operation creates the equivalent of a wet perineal colostomy that compounds hygienic difficulties.

A truly dependable solution to the vexing problem of exstrophy continues to be elusive, for living without a bladder is much like trying to "fill an inside straight." Nevertheless, it is possible to "hit the jackpot." One patient included in this study still has a normal-appearing upper urinary tract on excretory urography 40 years after bilateral ureterosigmoidostomy for exstrophy (Fig. 20 *B*).

Regardless of the manner in which the urine is diverted, the abdominal defect and the associated epispadias must be repaired. Males present a special technical hazard. Precautions must be taken to avoid obliteration of the ejaculatory ducts or the patient will develop distended

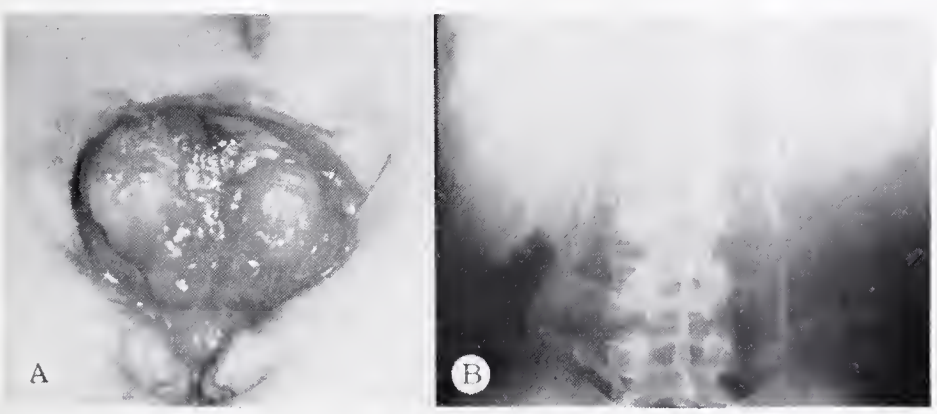


Figure 20.
A, Typical exstrophy of bladder in young female. *B*, Normal excretory urogram 40 years after bilateral ureterosigmoidostomy for vesical exstrophy.

seminal vesicles, painful epididymides, and faulty ejaculation. If the openings of the ejaculatory ducts are free within the newly constructed urethra, these patients are able to propagate normally and have done so.

Summary

Too frequently abnormalities of the male external genitalia are overlooked, ignored, or maltreated. The extent of the deformity may vary from that of an inadequate urethral meatus to that of mistaken sex or absence of a functioning bladder. Accurate diagnosis is a prerequisite of rational treatment.

Every type of surgical procedure has an appropriate time when it can be employed most advantageously. The ideal therapeutic plan has not been evolved for all genital anomalies but further technical improvements no doubt will be made.

It is conceivable that all of these unfortunate individuals eventually will be able to look forward to normal futures if there is proper cooperation between practitioners who resolve to recognize the problems early and specialists who are dedicated to correcting them.

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Cori Cycle Activity in Man

C. Waterhouse and J. Keilson (Univ of Rochester, Rochester, NY)

J Clin Invest 48:2359-2366 (Dec) 1969

After an overnight fast 12 patients were studied with trace amounts of pyruvate-3-^{14}C and glucose-6-^{14}C. Blood disappearance curves and incorporation of the pyruvate-3-^{14}C label into blood glucose were determined. By the use of transfer functions which allow processes with many different chemical steps to be examined as a unit, the percent of pyruvate and presumably lactate which is regenerated into glucose was determined. Eight of the 12 patients showed that 7 to 23 mg/kg/hr are recycled, while four patients fell well outside this range. Correlation of increased activity was not good with any demonstrated metabolic abnormality (diabetes or obesity), and from clinical observation it is suggested that anxiety may play a role.

Therapy and Prevention of Disseminated Intravascular Clotting

S. Popov, H. Egli, and M. Dohmen (Chirurgische Klinik der Universität, Bonn, West Germany)

Med Welt 20:2458-2471 (Nov 8) 1969

Eleven patients in shock due to severe trauma, in the majority following an automobile accident, developed a hemorrhagic diathesis. The first group of three patients was treated with vitamin K_1 and with Cohn's fraction I. All three died. The second group of five patients was treated with heparin and epsilom-aminocaproic acid. Only one patient died, the rest survived. The third group of three patients was treated exclusively with heparin and all survived. There was evidence of disseminated intravascular clotting as the underlying cause of the hemorrhagic diathesis. Heparin seemed the only effective and, retrospectively, logical method of treatment. Heparin given early in the course of this syndrome may act as preventive medication.

Delayed Skin Grafting

James G. Stuckey, M.D.*, and Thomas H. Allen, M.D.**

A 100 per cent take of *every* skin graft *every* time should be the goal of *every* surgeon who does skin grafting. It is realized that such Utopian surgical result can never be achieved, but it certainly should be strived for.

The technique of preparing the wound surface, then waiting two days before applying a skin graft is referred to by the authors as "delayed skin grafting." It is felt that this technique adds to the percentage of take of skin grafts to those wounds which are normally quite difficult to manage due to location, infection, stasis, etc.

Skin grafting can be compared to farming. You can't take a handful of corn and throw it on the ground and expect it to grow. You have to test the soil, fulfill its nutrient requirements, plow it, get the proper moisture content, and then plant the corn. If the weather man is good to you and you get enough rain, or not too much, a good corn crop should grow. In skin grafting, the patient's physical condition has to be such that he is capable of healing a wound. If he isn't, conditions such as hypoproteinemia, elevated BUN, avitaminosis, and sepsis, to mention only a few, should be corrected before an attempt is made at grafting. Even when the laboratory says you are within normal limits, a chronic wound should show evidence of healing by the ingrowth of a wave of scar epithelium over the granulating surface below the grafts are attempted.

Attention to detail is necessary for successful grafting. The wound is excised to normal underlying and surrounding tissue. When this wound is on an extremity, it is the better part of valor



CASE No. 1

Figure 1 illustrates a three-week-old avulsive injury to the skin of the sole of the foot with secondary infection. The skin had been sutured back in position, but did not survive. The patient was treated with antibiotics, the foot was elevated, and continuous hot wet dressings applied for 3 days. The wound was then excised, wet-to-dry dressings applied, and 48 hours later a thick split-thickness skin graft was placed over the wound. Figure 2 shows the appearance of the graft 10 days postoperatively.



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to do this excision under tourniquet, catch the obviously exposed larger vessels and ligate them with 4-0 or 5-0 plain cat gut sutures, release the tourniquet for a few moments to identify any large vessels that have been missed and clamp and ligate them. The extremity is then re-stripped with the Esmarch or Martin bandage, the tourniquet elevated, a pressure dressing applied, and the tourniquet then released. The make-up of this dressing and its application is very important. Dry fine mesh gauze is placed over the wound, 3 or 4 layers of 4 x 4s are applied over this to conform to the wound, a Kerlix roll is applied snugly, and the entire dressing is wet with 1% Neomycin solution. This solution is obtained by dissolving 5 gms. of Neomycin powder in 500 cc. of normal saline. A layer of ABDs, another Kerlix layer, another layer of ABDs, another Kerlix layer, and a final layer of roller gauze bandage is applied, exerting smooth, uniform pressure with this last material. The entire dressing is again soaked with Neomycin solution. The tourniquet is released at this point, with the expectation that there will be some bleeding into the dressing.

The patient is returned to the room with instructions to the nursing service that the extremity be elevated, but that no plastic or rubber sheets be placed around the dressing, and that it be allowed to dry. This wet-to-dry process allows the wound surface exudate to be absorbed into the dressing. If the dressing does not dry out, the wound surface is macerated and edematous. In 24 hours the surgeon wets the dressing again with Neomycin solution, and in 48 hours the patient is brought back to the operating room, the dressing removed down to a fine mesh gauze, which is soaked thoroughly with normal saline, and it is removed. There should be a small amount of bleeding from the wound, but this can easily be controlled by wrapping a



CASE No. 2

Figure 3 illustrates a pigmented, hairy nevus on the hand of an infant girl. When this patient was 2 years of age the nevus was excised, wet-to-dry pressure dressings applied, 2 days later thick split-thickness skin grafts were used to cover the wound. Figure 4 shows the hand six months later. The loss of skin at the wrist is the result of the patient scratching underneath the dressing.





CASE No. 3

Figure 5 shows a 2-month-old dirty burn wound of the shoulder and chest on a 4-year-old girl. The wound was excised, a wet-to-dry pressure dressing was applied, and 2 days later a thick split-thickness skin graft was used to cover the wound. Figure 6 depicts the result 7 years later.



Kerlix roll soaked in normal saline around the extremity and applying pressure to it for approximately 5 minutes. When this is removed, the surgeon will find a clean, dry wound with a suggestion of early granulation tissue over it.

A skin graft of desired thickness is taken from the appropriate donor site and applied to this wound. The authors usually suture the graft in position and hold it with a tie-on type dressing, using vaseline gauze next to the graft, and mechanics waste or fluff gauze as the bulk of the dressing tied in position. Kerlix rolls are usually applied on top of this, then a layer of ABDs, then another layer of Kerlix roll, then a final layer of roller gauze for pressure and fixation of the area. Splints are used when indicated.

The graft is ordinarily inspected on the 3rd day, at which time 100% take is anticipated, and usually found. If, perchance, there should be pockets of serum or blood beneath the graft, these are opened and allowed to drain. The same type dressing is re-applied to the wound, except the tie-on portion is eliminated. The graft is inspected again on the 7th postoperative day, and this time the sutures are removed and any excessive skin trimmed away. Margins of the graft are painted with 10% Mercurochrome, and the pressure dressing re-applied.

All dressings can usually be removed by the 12th to 14th day. Dressings are continued, of course, in dependent areas and areas where the contracture of the graft will exert a deforming influence. In these areas, appropriate dressings are continued until the graft is six weeks old, at which time its major shrinkage has occurred.

Blood is your best friend, and can be your worst enemy in skin grafting. If there is not an adequate blood supply to the wound a skin graft will not grow, and if there is a hematoma under the graft, that portion of it will not take. Graft loss due to hematoma is almost completely eliminated by the delayed technique. It might seem that doing two procedures on the patient two days apart would represent a greater morbidity than a single procedure, but it has not been the experience of the authors. In fact, it is easier on the patient, and the surgeon.

The delayed skin grafting technique was used on the following cases:

Summary

The technique of delayed skin grafting enables the surgeon to cover difficult wound areas with intact sheets of split-thickness skin, and get a near 100% take of the grafts.

Early Recognition and Treatment of Impending Volkmann's Ischemia in Lower Extremity

D. R. Willhoite and J. H. Moll (Brooke General Hosp, Fort Sam Houston, Tex)

Arch Surg 100:11-16 (Jan) 1970

Impending Volkmann's ischemia in the lower extremity should be suspected from the mechanism and severity of forces producing the injury. When suspected, the patient should be observed closely for the early symptoms, which appear to be disproportionate pain, decreasing sensation and decreased function of the long toe flexors, reflecting changes due to hypoxia of the deepest muscular compartments of the leg. Three illustrated cases are presented. Prompt, adequate treatment consisting of extensive open fasciotomy should result in a normal or nearly normal lower extremity. An area of split-thickness skin graft is a small price to pay for an intact functional lower extremity.

Critical Study of 5% Guanethidine in Ocular Manifestations of Graves' Disease

N. E. F. Cartiledge et al (Royal Infirmary, Newcastle upon Tyne, England)

Brit Med J 4:645-647 (Dec 13) 1969

Assessment was made of topical 5% guanethidine in the treatment of the eye manifestations in a series of 22 euthyroid patients with either thyrotoxicosis or ophthalmic Graves' disease. In a double-blind crossover study guanethidine produced greater improvement in lid retraction than a control solution of methyl cellulose, and in a long-term study this improvement was maintained. Compared to previous reports concerning 10% guanethidine, few side effects were noted with the 5% solution. Certain recommendations are made concerning the use of topical guanethidine in the treatment of the eye manifestations of Graves' disease.

Evaluation of Tuberculosis Chemotherapy Program at Jefferson Hospital, Pine Bluff, Arkansas

William Lester, M.D.*

The following is a summary of my impressions and opinions concerning the Medical Audit I performed on the Tuberculosis Program as operated at the Jefferson Hospital in Pine Bluff, Arkansas, and peripheral clinics in the area. This report is based upon the observations I made during the period of November 5 through November 8, 1969, and consisted of visiting one of the clinics in Warren, Arkansas, on the morning of November 6, 1969, with Dr. Tracy and subsequently visiting the clinic in Jefferson County Health Department in Pine Bluff, Arkansas, with Dr. Sullenberger on the afternoon of November 6, 1969. In addition, all records of patients admitted to the treatment program at Jefferson County were made available to me for inspection. This represented more than 500 hospital records; and of these, I examined in detail more than 100 such records chosen randomly from the total group. I paid particular attention to those records of patients who entered the program in the summer of 1967 and therefore would represent the most senior experience of the program, as well as those patients currently hospitalized at the present time. Throughout this study, I received nothing but the most complete cooperation from all individuals. All of my questions were answered freely and openly, and at no time did I feel that any information was being denied me. Mrs. Hermione Swindoll was most helpful in setting up all arrangements for this study and transporting me from place to place. The statistical analysis of the program is included in the appended Tables 1-6.

It is not possible to separate the hospital program from the clinic program since they are interrelated and interdependent. An excellent hospital program fails without adequate outpatient clinic support, and similarly a good outpatient clinic program is a failure unless adequate hospital facilities are available. Therefore, rather than attempt to distinguish between the two administrative parts of this program, I would prefer to deal with the program as a total one recognizing that it involves the hospital as the keystone of early treatment with clinic follow-up then as the major determinate of long-term success.

It is my firm conviction that this program represents a major demonstration of effective delivery of medical care to patients combined with remarkable dedication on the part of all concerned, the result being an amazing demonstration of the efficacy of modern chemotherapy in the treatment of tuberculosis today.

At the present time, the hospital program is largely dependent upon the participation of six physicians who also have been prominent in the clinic program. These are Drs. Miller, Tracy, Crenshaw, Sullenberger, Hoover, and for the first year, Dr. Jenkins. These individuals have worked as a team and, apparently without designated leadership on the part of any specific individual, have made successful what otherwise would be considered an administrative monstrosity. They have cared for the largest number of patients in the hospital and also have provided the bulk of clinic service for the 12-county area served by the hospital. In reviewing their records, both in the clinic as well as in the hospital, I was impressed with their completeness and the attention to detail which they showed. All these men seemed to be well trained in modern chemotherapy and alert to the problems that one encounters; and it would be, I think, difficult indeed to criticize their professional competence, particularly in this field. In general, it is my conviction that the hospital records from these individuals are of a quality that would be difficult indeed to duplicate in the rest of the United States. I believe they are to be congratulated; and I think it is remarkable that they have done this without developing personal stresses and frictions, since there is in a sense no titular or designated leader at the present time. The records of the private physicians who referred patients into the hospital and were accepted by the program, but who elected to maintain control of the patient in the hospital,

* Chief of Chest Medicine, National Jewish Hospital, Professor of Medicine, University of Colorado.

TABLE 1
HOSPITALIZATION SUMMARY
HOSPITALIZED IN JEFFERSON HOSPITAL
July 1, 1968 — June 30, 1969

	Total Patients	Avg. Length of Hospitalization*	Avg. Total Cost	Avg. Cost to State**
Totals	209	26 Days	$1,118.65	$ 598.58
New Treatment Cases	89	33 Days	1,218.14	675.91
Positive Bacteriology Cases	64	38 Days	1,320.41	731.21
Negative Bacteriology Cases	17	17 Days	807.28	193.09
Reactivated Old Cases	8	31 Days	1,273.03	621.95
Retreatment Cases	22	26 Days	1,440.72	976.24
TB Suspects—Diagnosis Pending	9	16 Days	1,062.01	288.88
TB Suspects—Cleared	43	12 Days	628.76	278.18
TB Suspects—Other Diagnosis	18	55 Days	1,319.78	687.03
Old Cases	16	17 Days	688.46	427.46
Mycoses and Atypical Mycobacterium	12	43 Days	1,860.13	808.59

*Cumulative for individual patients if more than one hospitalization.

**After hospitalization insurance utilized. (Excludes physician's fees.)

are as might be expected much less satisfactory. This I fear is a reflection of the experience of these physicians in the chemotherapy of tuberculosis but also may be a reflection of the pressure on their time. However, in general, the important things seem to have been obtained in all patients; and the general level of professional care in the hospital was excellent.

The morale on the ward and the attitude of patients and staff toward each other were truly remarkable. However, as time goes on I think it will be essential that a leader for the group emerge. I think this would be of great help and also would make it possible to improve the performance of some of the private physicians who occasionally contribute patients to the program. This, of course, is predicted upon the availability of such a leader, and one would hope that with time such a person would be found. In view of the relative short distances involved, it might be worth considering having one of the clinical meetings held in Little Rock each month or perhaps on a bi-weekly basis in order to make it easier for experienced consultation from Little Rock to be made available to the group.

It is obvious that significant reliance has been placed upon the State Laboratory in Little Rock; and this, I think, is desirable, particularly in terms of susceptibility studies and more detailed characterization of some of the atypical cultures. At the present time, however, there is no qualified tuberculosis bacteriologist regularly available at Jefferson Hospital. The immediate needs of the hospital program have been met through the provision of bacteriological facilities by nighttime personnel moonlighting from the arsenal at Pine Bluff. This means that there is no opportunity for coordination and mutual discussion between the clinical and laboratory groups, and I think this is regrettable. I think that every effort should be made to strengthen the bacteriological program at Jefferson Hospital. Certainly, the basic cultural studies should be available on all patients including direct susceptibility studies to streptomycin, isoniazid and PAS on all initial isolates plus niacin tests on all initial isolates. More complicated procedures could well be referred to the larger and better equipped laboratory in Little Rock. In addition, efforts should be made to strengthen the hospital laboratory in terms of facilities for fungal cultures since these are highly relevant to the clinical problems presented by many of the patients. Since Arkansas is in the histo-

plasmosis belt, there should be good routine facilities available for the recovery of this organism, as well as blastomyces and any of the other fungi. The addition of at least one good full-time bacteriologist to the program would be most helpful.

The weekly conference held at Jefferson Hospital again is a remarkable example of success which is largely due to the dedication and generosity of the individuals involved. I think there could be much greater use of the roentgenologist in the conference so that he could be asked to discuss the clinical findings in specific cases. It would be my suggestion that the chairmanship of the conference should be rotated from week to week and should include all physicians interested in the program. It has been my experience that the assuming of a responsibility by an individual is one of the best ways to get him interested in a problem. I think it would be possible then that some of the presentations would be improved. I believe there has been perhaps too much emphasis upon the diagnostic value of second strength PPD in the evaluation of patients. There also seems to be at the present time some doubt as to the reliability of the 5 TU intermediate strength PPD, and it would be possible to check this out with simple cross testing using other PPD's or first strength tuberculin on occasion.

Physicians referring patients into the program and treating them also should be cajoled or coerced into following the current diagnostic standards more explicitly. It was noteworthy that in many of the charts extrapulmonary lesions were not diagnosed nor recorded, and this gives a false picture of the disease as one sees it.

One of the major contributions that this program has made lies in the fact that it represents a positive indoctrination of the patients for the acceptance of necessary medical care. Today, tragically, many tuberculosis institutions and programs are, in a sense, postgraduate schools in educating patients to avoid or evade necessary medical care. The impact on many patients of entering a conventional tuberculosis hospital is often tragic and discourages their further cooperation. The beautiful facility in Jefferson Hospital certainly must be appreciated by these patients. The close personal relationship that one sees between the patients, nurses, physicians and paramedical personnel is an enormous asset to this program. The imprint of this positive experience in the hospital I am certain has significant contribution to the fact that the

TABLE 2

HOSPITALIZATION SUMMARY
HOSPITALIZED IN JEFFERSON HOSPITAL
July 1, 1967 — June 30, 1968

	Total Patients	Avg. Length of Hospitalization*	Avg. Total Hospital Cost	Avg. Hospital Cost to State	Avg. Phy. Fee to State	Avg. Cost to State**
Totals	196	30 Days	$1,250.98	$ 720.33	$ 225.91	$ 946.24
New Treatment Cases	87	38 Days	1,389.49	939.40	330.00	1,269.40
Positive Bacteriology Cases	55	50 Days	1,795.11	1,345.00	431.25	1,776.25
Negative Bacteriology Cases	18	21 Days	841.72	272.69	99.78	372.47
Reactivated Old Cases	14	33 Days	1,296.85	799.27	228.23	1,027.50
Retreatment Cases	13	67 Days	2,522.97	1,821.70	589.92	2,411.62
TB Suspects—Diagnosis Pending	4	19 Days	836.55	673.11	92.50	765.61
TB Suspects—Cleared	33	11 Days	616.37	232.25	56.83	289.08
TB Suspects—Other Diagnosis	28	18 Days	1,205.73	429.28	112.17	541.45
Old Cases	20	17 Days	882.78	449.07	114.75	563.82
Mycoses and Atypical Mycobacterium	11	35 Days	1,491.44	401.70	217.72	619.42

*Cumulative for individual patients if more than one hospitalization.
**After hospitalization insurance utilized.

TABLE 3
ADMISSIONS TO PULMONARY DISEASE UNIT
JEFFERSON HOSPITAL
July 1, 1967 — June 30, 1969

Admissions		Sex		Age Group		
	Totals	Male	Female	Under 25	25-65	Over 65
Total	435	281	154	52	252	131
Tuberculosis Suspects	301	189	112	45	169	87
Old Tuberculosis Cases	71	42	29	3	41	27
Retreatment TB Cases	37	31	6	3	23	11
Mycoses and Atypical Mycobacterium	26	19	7	1	19	6

TABLE 4
ADMISSIONS TO PULMONARY DISEASE UNIT
JEFFERSON HOSPITAL
July 1, 1968 — June 30, 1969

Admissions		Sex		Age Group		
	Totals	Male	Female	Under 25	25-65	Over 65
Total	239	163	76	28	134	77
Tuberculosis Suspects	163	112	51	24	85	54
Old Tuberculosis Cases	37	18	19	3	22	12
Retreatment TB Cases	24	20	4	1	16	7
Mycoses and Atypical Mycobacterium	15	13	2	—	11	4

great majority of patients were being readily and reliably followed in the clinic. The sum total of this, of course, is that there is here a much greater continuity of effective chemotherapy than one sees in more conventional programs. At the same time, this program represents, I believe, a major experiment in social medicine; and it would be a wonderful thing if student nurses and medical students could have the opportunity to observe this program and see how it serves to improve the acceptance and understanding of patients in a public health program.

All personnel within the program were deeply concerned as to its long-term viability because of problems relative to its support. The financial figures given me would indicate that this should be most easily justifiable in terms of presentation to the State Legislature. In the treatment of such a disease as tuberculosis, figures such as "per diem cost in hospital" or "per capita cost in clinic" should not be considered critical figures. The significant figures would be the cost per problem solved; in other words, the cost per patient returned to society and maintained as a productive person. I am quite sure that the costs for this program involving the more than 500 patients who have been through the hospital aspect of it are so low that they would stand comparison with any figures throughout the world. Certainly, I know of no long-term hospitalization program available anywhere in this country that could approach the economy of this one. As I emphasized earlier, this economy speaks for itself. However, I believe a much more important factor is that all of the individuals concerned with this program by and large will be willing to cooperate with health authorities in the future and, in a sense, have been educated in how to use a modern medical facility. Since this represents one of the major needs of our society, I think this program should be recognized for what it has contributed to this solution.

Since hospitalization is remarkably short at

TABLE 5
ADMISSIONS TO PULMONARY DISEASE UNIT
JEFFERSON HOSPITAL
July 1, 1967 — June 30, 1968

Admissions		Sex		Age Group		
	Totals	Male	Female	Under 25	25-65	Over 65
Total	196	118	78	24	118	54
Tuberculosis Suspects	138	77	61	21	84	33
Old Tuberculosis Cases	34	24	10		19	15
Retreatment TB Cases	13	11	2	2	7	4
Mycoses and Atypical Mycobacterium	11	6	5	1	8	2

TABLE 6
ACTUAL EXPENDITURES FOR JEFFERSON HOSPITAL TUBERCULOSIS PATIENTS
July 1, 1967 — June 30, 1968

Hospital Cost to State	$141,185.65
Total Hospital Cost	245,192.26
Overall Cost to State	185,463.97

Jefferson Hospital, a major concern might arise concerning the infectivity of patients discharged early from the hospital. In reviewing the records I formed a very firm impression and conviction that the Staff had become remarkably able in judging when it is safe to discharge a patient. In reviewing the clinic records, it was quite clear that the enormous majority of patients discharged from the hospital before they were known to be culture negative turned out subsequently to be culture negative as followed in the clinics and under this basis would in no way represent a public health threat. This is an experience that one acquires from intensive treatment programs with patients, and I was impressed with the effectiveness of the Staff judgment in this particular matter. The rates of relapse were negligible, in fact, remarkably small; and this too is an indication that the timing of discharge was a wise decision on the part of the Staff.

In conclusion it must be pointed out that the need for continuity of this program is obvious, immediate and enormous. This program certainly is serving the 12-county area to a degree that no other program presently available could match. If no other funds are available, it wou'd certainly seem appropriate that the funds made available to the State Sanatorium Board could be reduced on a pro ratio basis to these 12 counties and used to fund this program. Certainly the ease with which these people are being followed represents an enormous asset to this program and would not be reflected or would not occur if they had to be followed through the sanatorium system which would be quite remote to them.

A possible criticism of the program at Jefferson Hospital and in the 12-county area might lie in the suggestion that the cases treated under this program are less complicated and simpler cases. From reviewing the charts and chest films of the patients in the series, I can assure you that this is not true. These patients are predominantly far advanced and represent as difficult treatment problems as one sees anywhere and are typical of tuberculosis as we see it in this country today.

The basic reason for the success of the program, I believe, lies in the personnel concerned, their crusading attitude toward it, and the fact that it represents a positive indoctrination of the patients leading to their cooperation and to their willingness to maintain adequate clinic follow-up. The clinic nurses were outstanding in their knowledge of the patients and in the obvious dedication with which they carried out their work. It was obvious that they, on many occasions, went out to patients in order to maintain drug administration and did so well beyond the regular working hours and on week-ends and holidays. Obviously, this was very much appreciated by the patients. There is nothing more comforting to a patient than to be seen by a doctor and a nurse with whom he is completely familiar and friendly and to know that at the

time of the next visit he will see these same people. Similarly, when the doctors and nurses know the patients as persons and individuals, it makes their job much easier since they will already know the personality attributes of the individual patient. I thought it was impressive that all of the patients I saw in the clinics obviously liked the nurses and physicians and seemed to experience pleasure in visiting a clinic. This is a relatively unique experience in our society and is one which should be supported.

Another positive attribute in this program which must be commented upon is that of the obvious willingness and support of the hospital through its Administration and Board of Trustees to make this program possible. It would be my hope that this program can become the prototype of others. I do not believe that every general hospital should have such a program; but it certainly seems to me that regional hospitals appropriately distributed throughout a state would be able to undertake the great burden of chemotherapy within the State, do it at a cost much more economically than that of an institutional program and deliver much better results. I have urged the physicians in this program to be prepared to write it up as the two-year experience has been accomplished. I think that this can be a stimulus to many other institutions and an example which will have nationwide importance. This also would represent a demonstration of voluntary cooperation within the part of professional staff and paramedical personnel to a degree that otherwise might not have been thought possible unless this example was to be examined.

The major technical problem in the program at the present time lies within the bacteriological laboratory. I believe that they are reporting too many positive smears which fail to grow out on subsequent cultures. This is a problem which arises when unusually sensitive screening techniques such as fluorochrome stains are used. However, I think it would be important that all positive smears be checked or confirmed by a more experienced reader. The presence of a full-time bacteriologist working at the hospital and closely integrated into the clinical team would solve this problem and generally improve the whole program.

Because of the utilization of roentgenographic equipment on a widespread basis, there is considerable variation in the quality of the films read. Many of them obviously did not have adequate cones to protect the patient against scatter radiation. This is particularly true in the children. Hopefully, as time goes on, this can be improved to the point that this problem no longer exists.

The analysis of the fate of patients followed in this program through the hospital and clinic and contrasted with those treated in the State's sanatorium and followed in the clinic as opposed to those treated only in the State Sanatorium, I think, speaks for itself and demonstrates the efficacy of this program, particularly for the individuals from the 12-county area entering into this program. Arkansas is a large state with a relatively sparse population, but obviously will have a continuing problem with tuberculosis for many years to come. The very nature of the rural inhabitants of Arkansas is such that they will tend, I believe, to be independent and will desire to maintain their independence as long as they can. This makes them a particularly effective group to deal with on the basis of this Jefferson Hospital 12-county Out-patient Program. The very efficacy of this program, of course, makes it possible to move these people into other public health programs which will be meaningful to them, and this obviously is being accomplished in the clinics as they are currently operating. To allow this program to collapse because of lack of support at this time would be tragic and, I think, in the long run cost much more money than currently is being spent on the program. Certainly, there would be no savings by curtailing this program. On the contrary, it would be my recommendation that it be expanded, and that the adequate bacteriological and laboratory support be made available to it, and that hopefully at some time in the future, a similar program be started in an appropriate hospital in some other part of the state, perhaps to serve an equivalent area of counties elsewhere.

My conclusions are as follows:

1. The program at Jefferson Hospital and in the twelve-county area is excellent and must be supported.
2. A clinical leader would be very helpful and might provide the opportunity to develop a similar program in another region of the State.
3. Full-time laboratory support for the program should be developed at Jefferson Hospital, and the bacteriologist should participate in

the clinical conferences and ward discussions.

4. Greater use should be made of the program as a teaching demonstration of the delivery of good medical care. The design and efficacy of this program should be brought to the attention of public health physicians and administrators, nurses, social workers and medical students.
5. If no other source of funds can be found, the Jefferson Hospital program should be supported by a pro rata reduction in the budget of the State Sanatorium Board.

The 28% Venturi Mask in Obstructive Airway Disease

G. A. Bedon, A. J. Block and W. C. Ball, Jr. (Johns Hopkins Hosp, Baltimore)

Arch Intern Med 125:106-113 (Jan) 1970

The 28% Venturi mask is effective in correcting hypoxemia in 60% of patients with acute respiratory failure. Patients with an initial oxygen tension of less than 30 mm Hg are unlikely to achieve adequate oxygenation with this mask and probably should be treated initially with 35% oxygen. Although mean increases in oxygen tension are fairly constant, the variability from patient to patient is more marked among acutely ill patients and probably results from the variable degree of anatomic right-to-left shunting present. There is little danger of precipitating acute CO_2 narcosis with the 28% Venturi mask, and in most cases it is preferable for oxygen therapy in acute respiratory failure.

Malformations Recorded on Birth Certificates Following A2 Influenza Epidemics

I. Leck et al (University College Medical School, London)

Public Health Rep 84:971-979 (Nov) 1969

A2 influenza was widespread in California, Pennsylvania, and Wisconsin in 1955-1961 and 17 Standard Metropolitan Statistical Areas in the eastern United States were affected by the epidemic of early 1963. Encoded abstracts of the birth certificates of children born in these areas were subdivided according to whether or not birth occurred approximately 26 to 40 weeks after the epidemics. Reduction deformities of the fingers were especially common among births following the 1963 epidemic. As in a previous series from Birmingham, England, the incidence of cleft lip did not increase after the first widespread epidemic of A2 influenza but was higher after subsequent outbreaks.

DEPARTMENT OF

PEDIATRICS

UNIVERSITY OF ARKANSAS
SCHOOL OF MEDICINE

Respiratory Allergy and Cystic Fibrosis

Discussors—Vida H. Gordon, M.D.,* Doyne Dodd, M.D.,** and Robert B. Bost, M.D.***
Participant—Jon Hall, M.D.****
Editorial Director—Jerry G. Jones, M.D.*****

Case Presentation

Present Illness

DR. HALL: This 15-year-old white male had a history of a dry, nonproductive cough associated with wheezes and "rattling in the chest" which occurred periodically since age 4 to 5 months. These episodes would resolve only with his physician's treatment and sometimes would last as long as a month. The attacks were worse in the winter and seemed to be precipitated by rainy weather. He also had colic as an infant and had frequent very foul smelling, bulky, greasy stools. The attacks of coughing and wheezing became more frequent and severe and were associated with marked nasal congestion resulting in mouth breathing.

He was hospitalized for the first time by his private physician in July, 1961, for multiple infected insect bites. Because of his history of frequent upper respiratory infections and foul-smelling, greasy stools, a "sweat-test" was performed and reported as positive. The child was placed on a low fat diet and was given Taka-Diastase, 1 tsp. t.i.d. (a carbohydrate splitting enzyme). On this regimen he experienced a marked reduction in the severity and frequency of his pulmonary infections, lasting for over a year. His symptoms again became worse, particularly at night. He continued to have frequent greasy stools associated with abdominal pain.

At this boy's first Pediatric Clinic visit in



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October, 1963, his complaints were chronic respiratory illness and a vesicular pruritic rash which had appeared intermittently on the dorsal surface of the fingers and toes since the age of four years. He was admitted in 1963 for a chronic lung work-up.

FAMILY HISTORY: The paternal grandmother died of tuberculosis before the child was born. The maternal grandmother had a questionable history of allergic rhinitis.

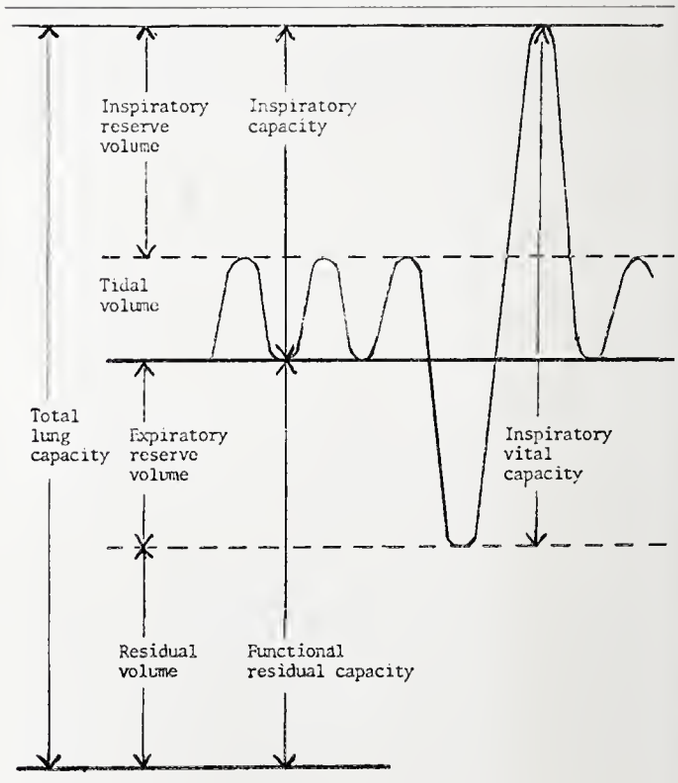
PHYSICAL EXAMINATION: Except for minimal hyperresonance, physical examination was within normal limits.

LABORATORY DATA: Hgb. 15.4 gm. WBC 15,400. Dff: Normal. Sed. rate 34 mm/hr. UA—normal. Stool trypsin—negative. Stool for fat—positive. Stool for occult blood—positive. Sweat chlorides 113.5 mEq/L. Bone age films for the patient at the age of 9 years were 5 to 6 years. X-rays of the chest 10-30-63 and 11-5-65 showed a normal chest. Nasal smear showed numerous WBC and few eosinophils.

HOSPITAL COURSE: The child was admitted to the hospital for 1 day, and the diagnosis of cystic fibrosis was confirmed. He was discharged on Viokase (pancreatin) and Winstrol (Stanozolol, a growth and appetite stimulant).

FOLLOW-UP: He was seen in the Pediatric Clinic in January, 1964, and was noted to have gained 4 pounds in the two months after hospital discharge. Physical examination at that time remained within normal limits. A history of coughing around dust and cats was obtained and an allergy work-up was considered. Postural drainage was begun and Co-pyronil was added as needed for the rhinorrhea. Because of some persistence of nasal symptoms during the spring of 1964, however, Chlortrimeton was added. A nasal polyp on the left side was noted in November, 1964. The chest at that time was hyperresonant but clear to auscultation. Scratch allergy skin tests showed House dust 2+, all Grasses 4+, Hickory 3+, Ragweed 2+, Amaranth 2+, Russian thistle 1+. The remainder of 45 tests done were negative. He was begun on hyposensitization in December, 1964. He was seen in March, 1965, with somewhat improved nasal symptoms, but a history of two episodes of severe rhinitis, coughing, and fever. A normal chest X-ray was obtained.

He has since been followed regularly in Cystic Fibrosis Clinic. He was last seen in March of 1969. At that time, the chest X-ray showed generalized hyperexpansion and increased lucency but no parenchymal infiltrates. His vital capacity was 3100 c.c. (normal 2500 c.c.). Bone age by X-ray at 13½ years of age was 10 years. However, on this clinic visit a heavy growth of



staphylococcus aureus was obtained from his sputum. His height had increased from less than the 3rd percentile to the 25th percentile and his weight had increased from less than the 3rd percentile to the 15th percentile. He has been essentially without allergic symptoms since initiation of hyposensitization in 1964.

Discussion

Dr. Gordon: We have for discussion today a child who appears to be retarded in growth and who has a past history of a dry nonproductive cough associated with wheezes and a "rattling in his chest" occurring intermittently since 4-5 months of age. The attacks sometimes lasted as long as a month, were worse in winter or in rainy weather, and were associated with marked nasal congestion. He also had a recurrent rash. To complicate this child's history he had colic as an infant and frequent foul smelling, bulky, greasy stools. The family history of this patient revealed that a maternal grandmother probably had allergic rhinitis. A paternal grandmother died of tuberculosis before the child was born. Since it is conceivable that he could have been infected by her contacts, a tuberculosis test, as well as a histoplasmin test, should have been applied to this child.

Unlike so many children with respiratory and gastrointestinal disorders, he was not put on a soybean milk. *This is a good thing*, as it has been well documented that children with *cystic fibrosis* who are fed soybean formulas do not grow satisfactorily. For these patients, a soybean formula does not provide adequate protein, whereas in normal infants it seems to be utilized well.

Since all of this boy's chest X-rays are normal, I have asked Dr. Dodd to contrast and discuss a chest film representative of acute asthma and one characteristic of early cystic fibrosis.

Dr. Dodd: The first check X-ray (Figure 1) is of a patient who had a diagnosis of asthma. It demonstrates hyperexpansion of the lungs with increased interstitial markings radiating from the hilar areas. The other finding that one sees with acute asthma is patchy atelectasis which may be more impressive radiographically than clinically. In the early stages the chest usually returns to normal between attacks but in long standing disease chronic bronchitis frequently develops. The next chest X-ray (Figure 2) is of a patient with cystic fibrosis. Early in the disease repeated episodes of pneumonia are common and one also sees marked hyperexpansion of the lungs with increased markings extending out from the hilar areas. Cystic fibrosis is more progressive than asthma and the bronchial walls become thickened causing the "tram line" appearance of parallel thickened markings. These patients develop bronchiectatic bulbs and lung abscesses which are responsible for the coarse stippled appearance of the lungs. This stippling extends more peripherally than do asthmatic markings. The pulmonary arteries are prominent due to the resistance of the lung fields eventually producing cor pulmonale.

Dr. Gordon: Now we would like to point out some of the problems this patient presents. Fortunately for the boy, as early as 7 years of age, in 1961, a sweat test was requested by his family physician at a time when he was hospitalized for infected insect bites. The mother reported that the test indicated cystic fibrosis of the pancreas and he was placed on Taka-Diastase and a low fat diet. A sweat test done in March, 1969, was 113.5 mEq/L a result indicative of cystic fibrosis. On his treatment regimen, there was a marked reduction in the number and severity of his pulmonary infections. Pulmonary function tests in March, 1969, revealed that his vital capacity was 3100 cc. The normal value is 2500 cc.

This boy has had various physical signs of allergy since early infancy. His nasal smear was positive for eosinophils, and his nasal stuffiness was relieved by antihistamines. The frequent respiratory symptoms were considered to be on an allergic basis, although the cause of the allergies was not investigated until 1964, 9 years later.

One of the purposes of this presentation is to emphasize the importance of physicians who ordinarily treat one or both of these illnesses investigating the other early. It is obvious that respiratory allergy uncontrolled will aggravate the pulmonary features of cystic fibrosis and the prognosis in cystic fibrosis will be greatly improved, according to Dr. Shwachman,[1] if diagnosed under three months of age. He made a statement as recently as August, 1969, that 80% of the cystic fibrosis patients who have been diagnosed and treated by age 3 months, have reached 19 years of age.

Dr. Shwachman also stated that measuring the salt concentration in sweat remains the single most reliable diagnostic test for cystic fibrosis.

Gharib and Joos[2] from Denver compared 100 patients with CF with 100 patients with asthma and 55 controls. In every case the children with cystic fibrosis had significantly higher values of sweat chloride.

The Van Metre and Cooke[3] study of 64 controls, 47 asthma patients and 21 CF patients showed definite overlapping of values. One of the control children had 70-79 mEq/L of chloride and one of the cystic fibrosis patients was in the same range. However, both of these studies show rather graphically that a well-performed sweat test is an extremely valuable aid in the diagnosis for the vast majority of patients.

One cannot explain growth retardation on the basis of asthma alone. Without steroid therapy, no real evidence indicates that asthma retards growth. Our patient's growth retardation is largely due to his cystic fibrosis.

Immunological tests for this type of patient can be very helpful. One could obtain a serum immunoelectrophoresis and a radial immunodiffusion test, which measures quantitatively the various fractions of gamma globulin, IgA, IgG, IgM, and IgE. Any patient with recurrent infections deserves this type of investigation, as it would pick up hypogammaglobulinemia, agammaglobulinemia, and dysgammaglobulinemia.

We define asthma as a chronic diffusely obstructive disease of the respiratory tract. It is manifested by paroxysmal episodes of dyspnea, wheezing, cough, increased mucous production, and a *sense of constriction within the chest.*

There are some noticeable differences between asthma and cystic fibrosis that may be helpful in diagnosis. In the next slide (Table I) an attempt has been made to summarize these differences. Note the much higher evidence of asthma in boys, with the sexes equal in cystic fibrosis. Negroes rarely have CF. In fact, only 1 in 9000 have this disease. Growth retardation is much more often associated with cystic fibrosis than with asthma alone. Sweat chlorides are most helpful in differentiating the two conditions.

A trial of epinephrine in small doses, perhaps 0.25 ml every 15 min. for 3 doses is often helpful. Noticeable improvement in wheezing within 30 minutes is diagnostic of atopic asthma. However, if one has asthma mixed with lower respiratory infection, the response will not be clear-cut, nor would it always be if the patient had cystic fibrosis plus asthma.

TABLE I

DIFFERENCES

	Asthma	*Cystic Fibrosis*
Sex	Boys—Girls 2.7:1	About equal
Race	No difference	Predominantly white 1/1000, only 1/9000 Negroes
Growth	Without steroids, no retardation if treated	Growth retardation always, if not treated early
Rectal prolapse	Absent	May be present
Sweat chlorides	Usually less than 60 mEq/L	Usually over 60 mEq/L
Enzymes	Trypsin, lipase present	Absent or very low
Digital clubbing	Uncommon	Clubbing common
Immunoglobulins	Total gg usually normal, IgG tends to be lower 5-10 yrs., IgA lower under 10 yrs., IgG lower 10-15 yrs., Higher IqE	Hyper gg (Late) (Elevated IgA and IgG, occasionally IgM)

The infrequent association of asthma and cystic fibrosis of the pancreas is well recognized. There can be wheezing in cystic fibrosis due to obstruction of the bronchi by the abnormal viscid secretions characteristic of the disease and by secondary infection and edema. It is important to differeniate this type of wheezing from that in *true allergic bronchial asthma.*

The published data on the association of asthma with cystic fibrosis, found in three different centers located in London, Canada, and Louisiana is shown in the next slide (Table II). The range varies from 11 to 49%.

TABLE II

PUBLISHED DATA ON THE ASSOCIATION OF ASTHMA WITH CYSTIC FIBROSIS OF THE PANCREAS

Author	Total No. of Patients With Cystic Fibrosis of the Pancreas	Patients With Asthma Associated With Cystic Fibrosis of the Pancreas	
		No.	%
Bodian	116	13	11
Abbott and Associates	102	10	10
Derbes, V. and Associates	68	33	49

It is less of a problem to determine which allergy patients have cystic fibrosis than the reverse. Sweat chloride measurements should be ordered by the allergist rather frequently. In

turn, the physician following a patient with cystic fibrosis needs to recognize associated, atopic asthma and seek diagnosis and treatment early. It is likely to improve the long range prognosis for his patient. The following slide (Table III) depicts the basis for diagnosis of respiratory allergic disease.

TABLE III

BASES FOR DIAGNOSIS OF RESPIRATORY ALLERGIC DISEASE

History:	Family history of allergic disease; recurring episodes of nasal symptoms or paroxysmal wheezing dyspnea or continuous wheezing.
Physical Examination:	Dyspnea: Mild to severe Expiratory. Inspiratory: Occas., oftener in infants, than adults. Poor aeration of part or most of lung fields. Nasal obstruction, seasonal and intermittent.
Laboratory Data:	Nasal smear with 10 + % eosinophilia 6-10% eosin. in peripheral blood. Positive skin tests.
X-Ray Study:	Findings may be normal. Often varying degrees of hyperinflation or areas of atelectasis.
Treatment:	Nasal symptoms relieved by antihist. Prompt response to administration of aqueous 1:1000 epinephrine (except in status asthmaticus).

We have mentioned the differences between asthma and CF and now I would like to summarize the similarities between these two disease entities. The next slide (Table IV) outlines these similarities.

TABLE IV

SIMILARITIES OF ALLERGIC ASTHMA AND CF

1. May occur in both sexes.
2. Onset may be first noticed in infancy.
3. Frequent URI may occur in both.
4. Hereditary influence on incidence of both.
5. Wheezing may be presenting symptom in both, though in asthma more in expiratory phase.
6. Both may have purulent sinusitis.
7. Both may have increased viscosity of tracheobronchial mucus and can develop bronchiectasis as a complication or mucoid impaction of the bronchi, more common in the upper lobes.
8. Both, with mucoid impaction of bronchi, may have a paucity of auscultatory abnormalities.
9. Nasal polyps can occur in both conditions.

Pulmonary function tests demonstrate the disease process in the lungs and provide a helpful means of following patients with both disorders. I have asked Dr. Bost to discuss the differences in results of pulmonary function tests in asthma and cystic fibrosis.

DR. BOST: This patient has a mild form of cystic fibrosis although he required a large amount of pancreatic enzyme to control his gastrointestinal manifestations of greasy, foul smelling stools. His chest X-ray at 9 years of age showed overexpansion of his lungs but nothing significant otherwise. This in itself indicates a mild form of cystic fibrosis. He has had considerable nasal allergy and before he was started on hyposensitization for the allergens to which he was sensitive, he had occasional episodes of wheezing. Patients with cystic fibrosis may occasionally have associated allergic conditions which are an aggravating problem. The cystic fibrosis makes the allergy worse and the allergy certainly aggravates the cystic fibrosis.

A very simple outline of *pulmonary function* is on this slide (Figure 3). Note that functional residual capacity is the residual volume of air plus expiratory reserve, which is the amount of air a person can blow out after they have ended a normal expiration. Vital capacity is the total expiratory volume.

In both cystic fibrosis and asthma, the vital capacity is decreased in patients with relatively severe disease. They will also have a decrease in forced expiratory volume and flow rate. Air is trapped in the lungs, increasing the residual volume and functional residual capacity, and diminishing the vital capacity. The clue that a patient has asthma is that his pulmonary function studies tend to return toward normal in the periods between episodes of his illness. However, the child with cystic fibrosis will have a base line beyond which he does not improve. Instead, his disease gradually progresses if he is not treated adequately. Of course, if one gives a bronchodilator to a child with asthma, his pulmonary function usually improves within 10 to 15 minutes. The peak expiratory flow rate and forced expiratory volume will improve as much as 15 to 30 percent. The rapid recovery of pulmonary function of the patient with asthma is characteristic and perhaps diagnostic. Patients with cystic fibrosis may show some improvement with broncho-dilating preparations but not nearly so much as is seen in asthmatics.

Arterial gas studies are quite different with cystic fibrosis, showing much more marked abnormality. It is unusual to see an asthmatic, unless he is in status asthmaticus, show any significant retention of CO_2 or significant increase in PCO_2. However, during an attack, asthmatics often show marked decrease in arterial PaO_2, whereas between attacks the PaO_2 is normal.

Questions and Comments

Question: What is the incidence of cystic fibrosis?

Answer (Dr. Bost): The incidence is about 1 in 1000 live births. The carrier state occurs in about 1 in every 20 to 30 individuals, so that in this room there are undoubtedly several CF carriers. Cystic fibrosis has a Mendelian recessive type of inheritance pattern.

Question: What percent of cystic fibrosis patients also have allergy?

Answer (Dr. Gordon): About 25% of cystic fibrosis patients will have nasal allergy or asthma. It is not too different from the percent of allergy in the child population at large. It is less of a problem to find out which allergy patients have cystic fibrosis than the reverse. Dr. Bost pointed this out too.

Summary

Dr. Gordon: The sweat chlorides should be ordered very frequently by all physicians, but especially by allergists. In turn, the physician following the cystic fibrosis patients needs to recognize the true atopic asthma in his patient and seek diagnosis and treatment early. One of the most helpful parts of the evaluation of this type of patient is a good history. A family history of allergic disease, recurring episodes of nasal symptoms, paroxysms of wheezing, or continuous wheezing should alert the physician treating cystic fibrosis that his patient may also have atopic allergy.

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Unreliability of Prognostic Criteria in Osteosarcoma

M. B. Gravanis, and T. E. Whitesides, Jr. (Emory Univ School of Medicine, Atlanta)

Amer J Clin Path 53:15-20 (Jan) 1970

A study of the cases of seven long-term survivors from a series of 39 cases of osteosarcoma has been analyzed. Age, sex, location and size of tumor, duration of symptoms, histologic grading, and treatment were taken into account. No differences were identified between survivors and non-survivors except for a direct relationship between average duration of symptoms prior to definite diagnosis, and survival. The five-year and ten-year survival rates were 23.3% and 16.7%, respectively, consistent with other recently reported studies. An unusual case of long-term survival with osteosarcoma in a patient with Paget's disease is included.

Electrical Burns of Lips and Mouth in Infants and Children

W. Pitts et al (Duke Univ Medical Center, Durham, NC)

Plast Reconstr Surg 44:471-479 (Nov) 1969

Experience demonstrates that surgical intervention in electrical burns of the lips, prior to spontaneous separation of the eschar and healing and softening of these wounds, is more harmful than beneficial. Wound excision followed by primary repair carries with it more than the usual hazard of sacrifice of previous tissue and, therefore, should be avoided. Reconstruction of these lips is recognized as a long sequence of multiple procedures with heavy investment of time and savings. If the initial approach is conservative, a maximum of useful tissue can be preserved.

SURGERY at the
UNIVERSITY OF ARKANSAS
SCHOOL OF MEDICINE*

*Under the direction of Gilbert Campbell, M.D., Professor of Surgery.

Long Term Visualization of the Intracerebral Cavitary Lesion
A preliminary report

Stevenson Flanigan, M.D.,* and Norman Gahm, M.D.**

Introduction

One of the continuing challenges for the neurosurgeon lies in a technique in the management of abscess of the brain that will match the results achieved by William Macewen of Glasgow.[1] The medical classic, published in 1893, under his pen, records a selection and management of patients which yielded a successful outcome in all but one of nineteen. It is not the least comforting to acknowledge a 25% mortality from the malady today. Selection determines these statistics to some extent, however, the availability of antibiotics and chemotherapeutic agents should weigh favorably for the present-day clinician.

Successful identification of the abscess by X-ray visualization offers both localization and an estimation of the extent of the lesion. When the choice in management has led to drainage or repeated aspiration, the long term visualization of the abscess has distinct advantages. Pneumoencephalography and arteriography remain applicable in the demonstration of intracerebral abscess, inasmuch as the lesion represents a space occupying mass and thereby causes a distortion of the usual anatomy. Except for the availability of repeated examinations (Fig. 1), however, the definition of change is not easily met.

In 1921 Horrax[2] suggested the instillation of air into the pathological cystic cavity when encountered on the introduction of a probing needle. Again, however, the contrast is quickly dissipated as the air is absorbed. Radiopaque contrast materials instilled into the cavity of an abscess provides another approach. Thorium dioxide in suspension was used clinically sometime ago by Kahn[3] in demonstrating an intracerebral abscess. The material is phagocytized by cellular elements in the wall of the abscess then remains as a lasting indicator of the state of the wall, simple to reassess at any time by conventional roentgen-ray study of the head (Fig. 2). But thorium is radioactive in the naturally occurring state. It is principally alpha particles that are emitted and the ionizing power is tremendous. Tissue reaction (fibrosis) is considerable (Thomas, et al.).[4] Hepatic tumors have been related to the use of Thorotrast,[5] and Selbie[6] has produced a neoplastic response in laboratory animals with the injection of Thorotrast subcutaneously.

Pantopaque (ethyl iodophenyl-undecylate)[7] among the iodinated oils has been useful. Negligible toxicity in the subarachnoid tissue has stood the test of long term use in myelography, and the material has also proven relatively innocuous when used in the cerebral ventricles (Horwitz).[8] These oils in the primary state are not miscible with the fluid contents of an abscess cavity and do not diffuse through the cavity. Full delineation of the lesion can sometimes be made with the various aspects of the head dependent.

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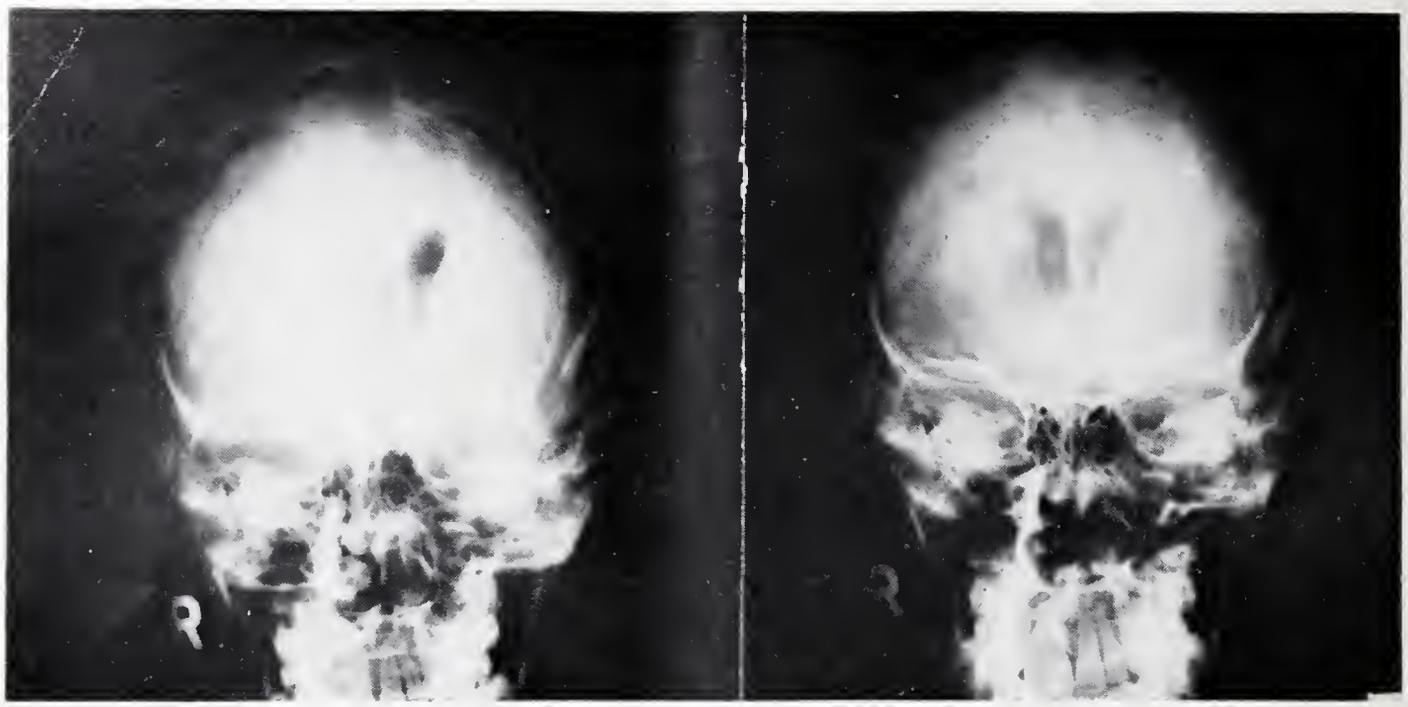


Figure 1.

Pneumoencephalograms repeated 28 days apart on a child demonstrating the original displacement of the ventricular system (left) and the subsequent recovery of a near-normal position (right) following effective drainage of a right-sided abscess.

Pantopaque tends to escape in the process of draining the abscess. In a 50% aqueous emulsion,* it might be expected that the fine particles (10 microns) would be phagocytized. However, Chalecke, et al.,[9] have indicated that in such a state this substance has an increased toxicity in the experimental animal.

Barium sulfate in micropulverized suspension has been experimentally evaluated and proven clinically tolerated in dealing with brain abscesses.[10, 11] It seems radiographically satisfactory for long term visualization of the intracerebral cavitary lesion.

Fischer[12] in describing a new agent for hepatolienographic diagnosis has called attention to colloidal stannic oxide. Animal tolerance was

*50% emulsion ethyl iodophenylundecylate: Lafayette Pharmaceutical, Inc., Lafayette, Indiana. Musopaque, General Electric Co., New York, New York.

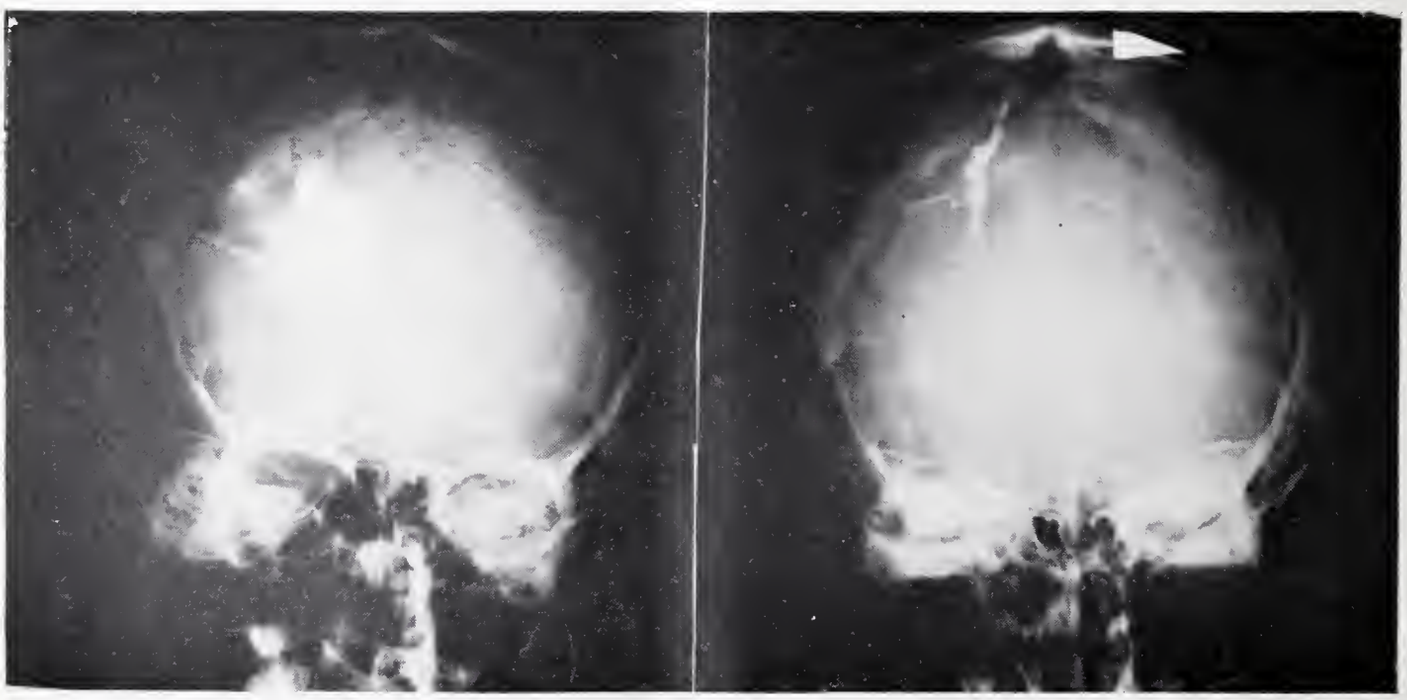


Figure 2.

Serial colloidal thorium oxide contrast X-ray studies with comparable views demonstrating the identification of an intracerebral abscess with an appropriate change in the configuration of the lesion over a period of two months following drainage of the abscess and subsidence of the infection.

reportedly satisfactory in acute experiments. Chronic stannic poisoning has not been recognized as a clinical problem despite circumstances of extensive industrial exposure (with the exception of organic tin complexes such as the tri- and tetra-ethyl compounds).

Tantalum as an oxide may also escape concern for toxicity.[13] There is experience with the tolerance of air-floated tantalum powder and appropriate pathologic studies have been reported (Bailey, et al.).[14] Whitcomb[15,16] has found no difficulty with extensive clinical use of the material for the identification of intracerebral cavities. Metallic particle sizes in the range of 10 to 50 microns have been described* and individual phagocytosis has been demonstrated. The problem of suspension stability of the metallic powder and of the oxide requires study in the development of an appropriate vehicle, but a simple saline paste can be used.[17]

It is the intention of this report to offer some experimental information bearing on the tolerance of tantalum oxide in comparison with two of the small particle barium sulfate preparations in the long term visualization of the intracerebral cavitary lesions.

Materials and Methods

Mongrel dogs weighing 12 to 25 kilograms were used in the study. Under intravenous Nembutal anesthesia a small cannula with a rubber balloon at the tip was imbedded in the parietal subcortical white matter through a burr hole. The ballon was inflated with one milliliter of Hypaque and left in place for seven to 14 days. At the end of this time, it was deflated and the resultant cavity injected with the radiopaque substance to be studied. Observations were made on animals injected with Barotrast, Micropaque, and tantalum oxide.

X-rays were taken at varying intervals to determine whether adequate and continued visualization of the cavity was achieved. Notations were made on clinical signs of toxicity. Finally, gross and microscopic examinations of the tissues were carried out.

Results

There were four animals subjected to the instillation of Barotrast into cavities established by the pressure effect of the small distended balloon. On X-ray examination the day following introduction in one animal, and on subsequent pathological examination, the contrast media was visible in the ventricular cavities. The animal died in that 24 hours after the introduction of the material. A second animal, in which the cavity had been established 14 days before injection of the radiopaque material, died four days after the injection. By X-ray there was good visualization of this cavity. It could not be determined that this was a matter of adherence to or incorporation by the wall of the cavity. Two other animals were sacrificed after 49 and 154 days of exposure to this material. The cavities in each had been established with the balloon in place for seven days, and the visualization continued excellent even in the long term survivor. That animal, however, demonstrated a seizure disorder. In the other the visualization was only fair inasmuch as most of the contrast material escaped the cavity through the introduction site.

In the five animals studied with Micropaque as the contrast medium, the cavities in all were established for seven days prior to the introduction of the material. Three of the five died in the first three days after injection of the medium. In one there was contrast material in the ventricle, in another there was subarachnoid Micropaque, and in the third the cavity seemed exceedingly large. Yet a fourth animal died when a second injection was made on the eighth day after the first. With both of these injections there was escape of the contrast material into the ventricular system. When rupture occurred from the artificial cavity into the ventricular system, visualization of the cavity was only fair but nevertheless detectable, so, also was the visualization of the ipsilateral and midline ventricular system.

The fifth animal in the Micropaque study was sacrificed after 84 days and Figure 3 illustrates the visualization of the cavity wall. On microscopic examination there was a minimum of gliosis surrounding the foreign material and at the junction between the solid coat of the material and the reactive wall there was incorporation of the particulate matter by macrophages. The parenchymal and ependymal reaction to this material was similar to that described by Blindermann.[11]

Among the five animals injected with tantalum oxide, there was only one that died; and in that one the material had been injected directly into the cerebral substance without prior establishment of a cavity. This animal nevertheless

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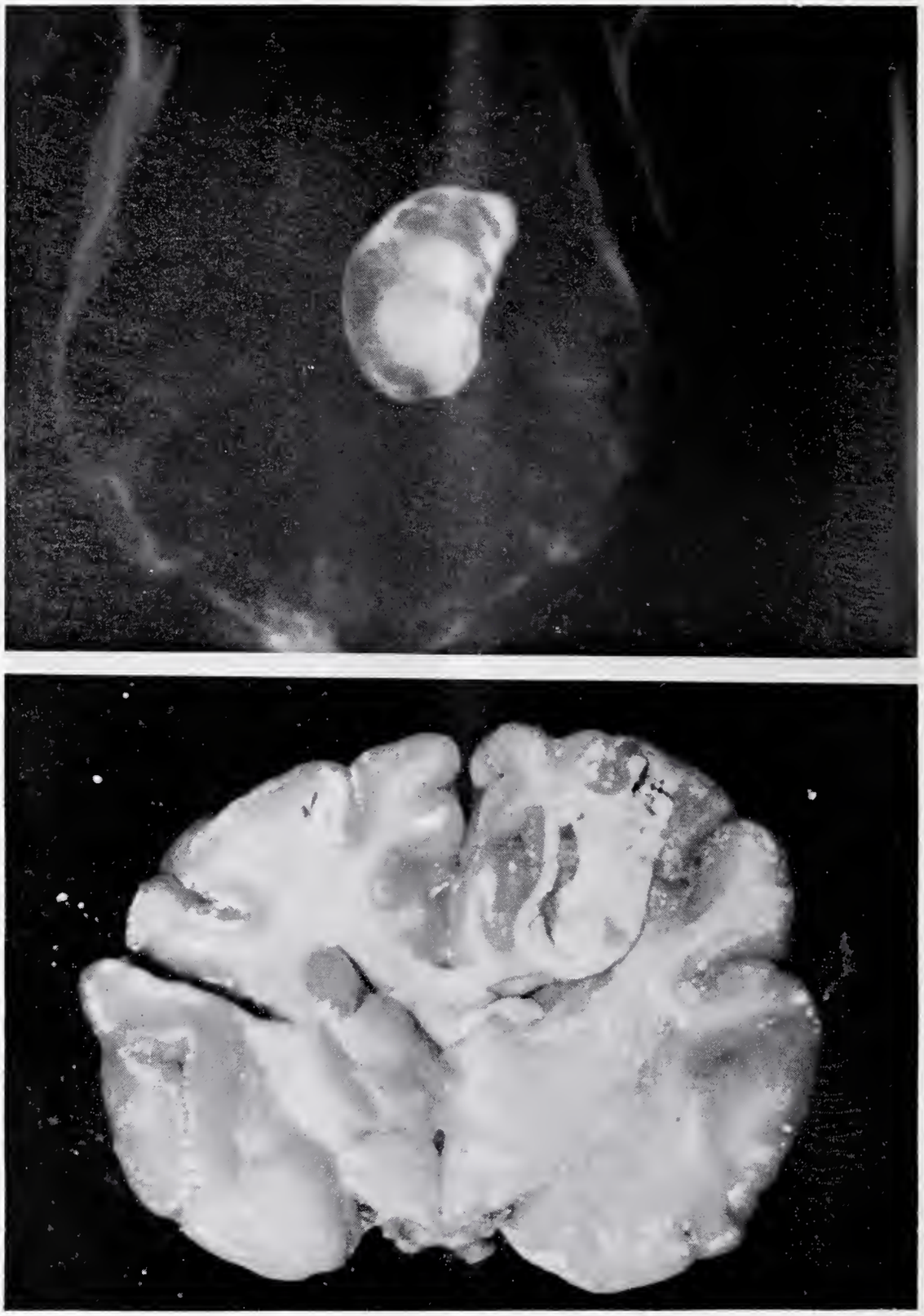


Figure 3.

Radiographic and pathological examination of the experimental cavity in a dog brain containing Micropaque.

survived for three weeks and the collection remained visible during that period of time. The other four animals were sacrificed from 56 to 98 days after introduction of the contrast material into the cavities previously established by balloon inflation. There was visualization of the ventricular system in one. In all five, there was good to excellent visualization by serial X-ray examination (Fig. 4). By macroscopic and microscopic examination the cavity walls were as they had been with the other media with some phagocytosis of the material.

Discussion

The period of time selected for the establish-

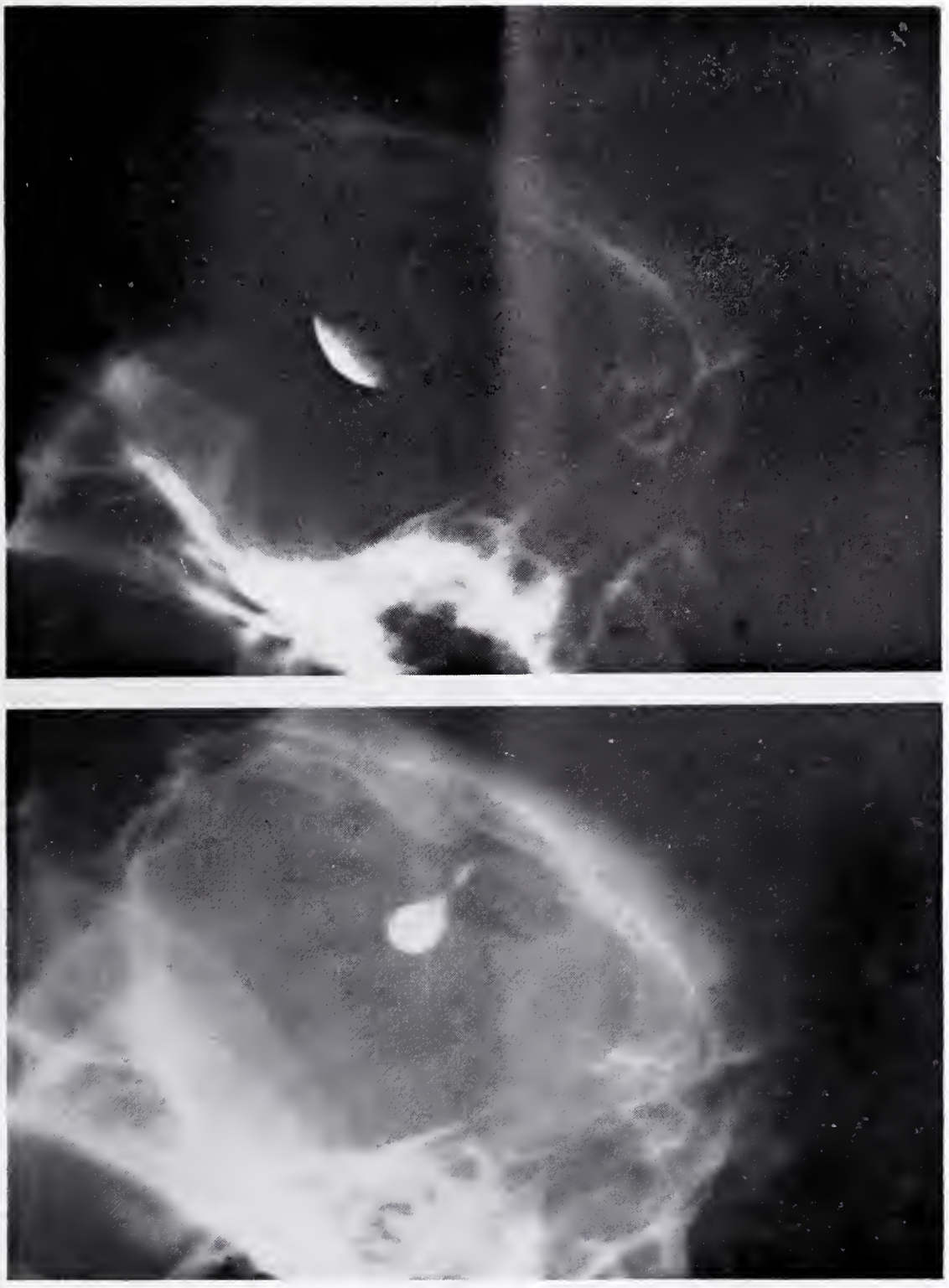


Figure 1.

Serial visualization of an experimental cavity in the dog brain over a period of two months using tantalum oxide.

ment of pressure cavities within these canine brains was based on the study by Collias and Manuelidis reported in the Journal of Neurosurgery in 1957.[18] That study indicated that microscopic evidence of mesenchymal proliferation was present in cerebral wounds on the seventh day. In the present study among those animals that survived for long term study, there were as many in whom the cavity had been established for only seven days prior to the introduction of the contrast medium as there were those had been established for 14 days. On the other hand, rupture of the cavity occurred more commonly in those that had been established only for seven days.

Micropaque extravasated into the cerebral ventricles or the subarachnoid spaces resulted in the death of four animals in a relatively short

period of time. This experience, along with the death of one animal in which the Barotrast entered the ventricular system raises the question of a toxic reaction to these barium materials. This was at variance with the clinical experience with Micropaque as it was described by Clarke, et al.[10] It is of interest that the tantalum oxide did not affect any apparent adverse reaction in the one animal in which there was rupture from the cavity into the ventricular system. Visualization of the cavitary lesions was roughly equivalent with these three substances.

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Mammography in Management of Breast Lesions

W. B. James and R. W. Irvine (Southern General Hosp, Glasgow)

Brit Med J 4:655-656 (Dec 13) 1969

The clinical and mammography findings in 101 histologically proved breast lesions indicate that the individual accuracy of each method in diagnosing carcinoma is approximately 90%, but when taken together an accuracy of 98% is achieved. Mammography is a valuable complement to clinical assessment in the management of a lesion in a large atrophic breast and can demonstrate an impalpable carcinoma. In the young dense breast, mammography is less useful and a negative report must be interpreted with caution.

ELECTROCARDIOGRAM OF THE MONTH

AGE: ___ SEX: Female BUILD: _____ BLOOD PRESSURE: _____

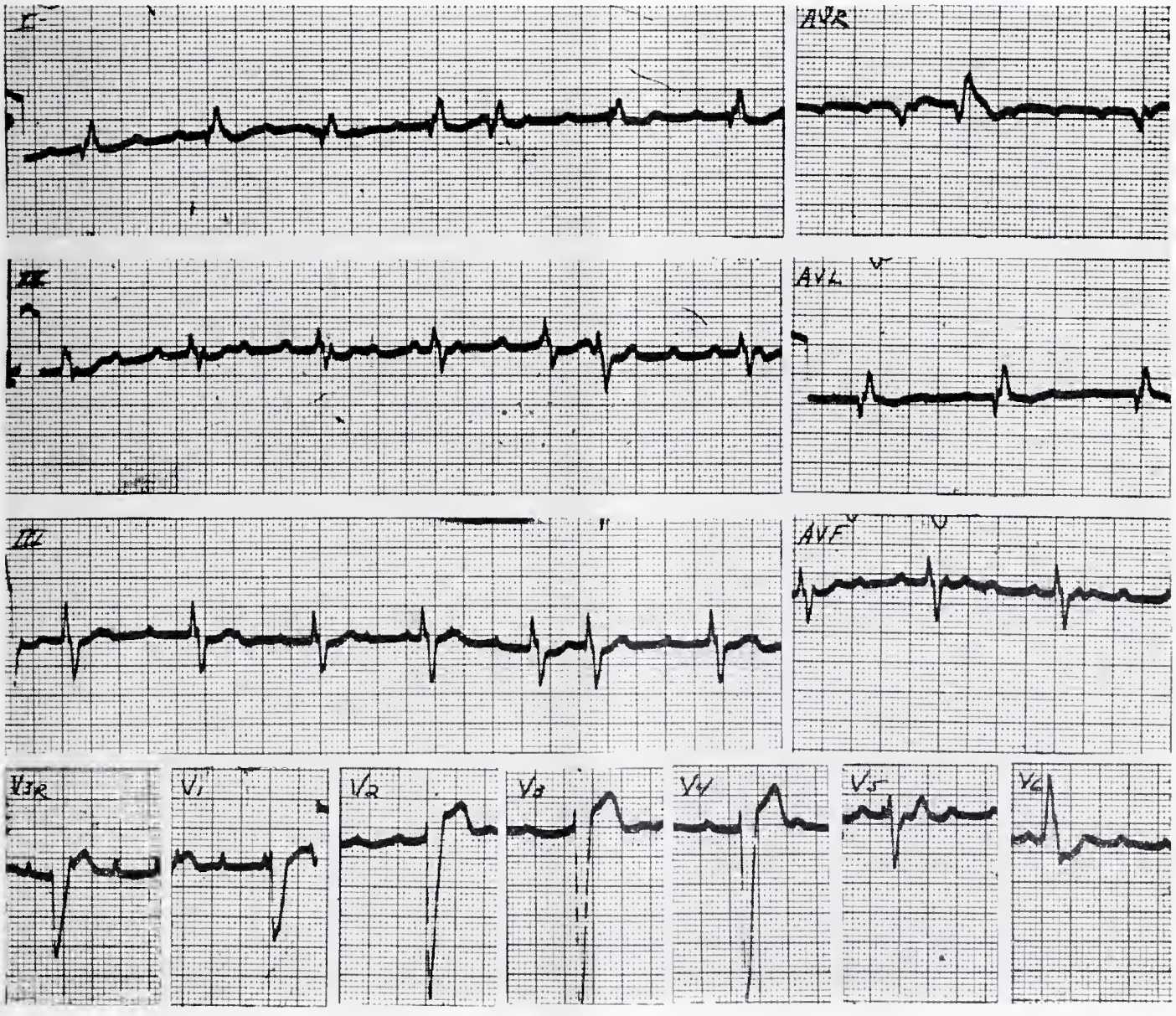
CARDIAC DIAGNOSIS:

OTHER DIAGNOSES:

MEDICATION:

HISTORY: Female; no additional information.

See Answer on Page 470



The Department of Medicine, University of Arkansas Medical Center
James S. Taylor, M.D., Professor of Medicine

RADIOLOGY CASE OF THE MONTH

Prepared by the
Department of Radiology, University of Arkansas
School of Medicine, Little Rock

See Answer on Page 470

Sanford A. Rubin, M.D.



HISTORY AND PHYSICAL EXAMINATION: This is a 45-year-old white male with a small growth on the fifth digit of his right hand for thirty-two years. This has enlarged over the last eighteen months and he now has difficulty flexing the finger.



The Health Consequences of Smoking

Summary Report

This report is a review of the pertinent medical literature on the health consequences of smoking which has appeared since the publication of the 1968 Supplement to the 1967 Public Health Service Review. The 1964 Report of the Advisory Committee on Smoking and Health, the 1967 Public Health Service Review, and the 1968 Supplement have presented the broad base of converging epidemiological, physiological, pathological, and clinical evidence on which knowledge of the health hazards of smoking is based. Included in this evidence are data which show the magnitude of the excess mortality and morbidity among smokers.

The following conclusions regarding the health consequences of smoking were summarized in the 1968 Supplement:

General Mortality Information

Previous findings reported in 1967 indicate that cigarette smoking is associated with an increase in overall mortality and morbidity and leads to a substantial excess of deaths in those people who smoke. In addition, evidence herein presented shows that life expectancy among young men is reduced by an average of 8 years in "heavy" cigarette smokers, those who smoke over two packs a day, and an average of 4 years in "light" cigarette smokers, those who smoke less than one-half pack per day.

Smoking and Cardiovascular Diseases

Current physiological evidence, in combination with additional epidemiological evidence, confirms previous findings and suggests additional biomechanisms whereby cigarette smoking can contribute to coronary heart disease. Cigarette smoking adversely affects the interaction between the demand of the heart for oxygen and other nutrients and their supply. Some of the harmful cardiovascular effects appear to be reversible after cessation of cigarette smoking.

Because of the increasing convergence of epidemiological and physiological findings relating cigarette smoking to coronary heart disease, it is concluded that cigarette smoking can contribute to the development of cardiovascular disease and particularly to death from coronary heart disease.

Smoking and Chronic Obstructive Bronchopulmonary Diseases

Additional physiological and epidemiological evidence confirms the previous findings that cigarette smoking is the most important cause of chronic non-neoplastic bronchopulmonary disease in the United States.

Cigarette smoking can adversely affect pulmonary function and disturb cardiopulmonary physiology. It is suggested that this can lead to cardiopulmonary disease, notably pulmonary hypertension and cor pulmonale in those individuals who have severe chronic obstructive bronchitis.

Smoking and Cancer

Additional evidence substantiates the previous findings that cigarette smoking is the main cause of lung cancer in men. Cigarette smoking is causally related to lung cancer in women but accounts for a smaller proportion of cases than in men. Smoking is a significant factor in the causation of cancer of the larynx and in the development of cancer of the oral cavity. Further epidemiological data strengthen the association of cigarette smoking with cancer of the bladder and cancer of the pancreas.

The most recent Public Health Service review of the effects of smoking on pregnancy was presented in the 1967 Report. The conclusions of that review were as follows:

Clearly, more research is needed to elucidate the significance of the relationship of smoking in pregnancy and low birth weight. Additional long-range morbidity studies are needed, as well as studies on the effect of smoking on uterine activities and placental blood flow.

Smoking does have an effect on the outcome of pregnancy. However, it is not known whether this effect is deleterious or not.

Until such evidence is presented so as to clearly define the role of smoking in pregnancy, it is more prudent at this time to advise pregnant women to stop or decrease their cigarette smoking practices.

No substantial negative evidence has appeared which refutes these judgments. On the contrary, studies made available since the publication of the 1968 Supplement and reviewed by panels of experts in the relevant medical areas confirm previous findings and add new evidence that smoking is a health hazard. Highlights of the 1969 Supplement are as follows:

I. *Smoking and Cardiovascular Diseases.* Further data from prospective studies confirm the judgment that cigarette smoking is a significant risk factor that contributes to the development of coronary heart disease, apparently by promoting myocardial infarct and cardiac arrhythmias. Analyses by several investigators of other associated factors (high serum cholesterol, high blood pressure and body weight) show clearly that the effect of cigarette smoking persists and is appreciable, even when these other factors are carefully evaluated. Autopsy studies suggest that cigarette smoking is associated with a significant increase in atherosclerosis of the aorta and the coronary arteries. Experimental studies in animals have provided new information on the pathological effects of cigarette smoking on the arteries. This further suggests the view that cigarette smoking promotes atherosclerosis.

II. *Smoking and Chronic Obstructive Bronchopulmonary Diseases.* Recent studies have demonstrated that cigarette smokers may have significant disease of the small airways in the absence of bronchopulmonary symptoms. This disease is demonstrated by the finding of abnormalities in the ventilation/perfusion relationships in the lungs of cigarette smokers. Animal experiments have demonstrated the pathological effects caused in the lung by exposure to cigarette smoke or to specified concentrations of products found in cigarette smoke. Conditions similar to pulmonary emphysema in man have been produced in some of these experiments. Other studies have investigated the pathological effects of smoking on pulmonary clearance mechanisms and demonstrated that pulmonary clearance may be significantly impaired by the effects of cigarette smoking. Epidemiological and laboratory evidence supports the view that cigarette smoking can contribute to the development of pulmonary emphysema in man.

III. *Smoking and Cancer.* A major pathological study of histological changes in the larynx has demonstrated a dose relationship between smoking and premalignant changes in the larynx. New animal models for the experimental study of respiratory cancer, which may be helpful in elucidating the mechanisms of respiratory tract carcinogenesis, have been developed and refined. More studies have been done to identify those substances in tobacco smoke which take part in carcinogenesis. These studies may help to define the exact biomechanisms involved in the cause and effect relationship between cigarette smoking and lung cancer.

IV. *Effect of Smoking on Pregnancy.* New data are presented which confirm the finding that maternal smoking during pregnancy is associated with low birth weight in infants and also indicate that maternal smoking is associated with an increased incidence of prematurity defined by weight alone. In addition, it appears that maternal smoking during pregnancy may be associated with an increased incidence of spontaneous abortion, stillbirth, and neonatal death and that this relationship may be most marked in the presence of other risk factors.

V. *Smoking and Noncancerous Oral Disease.* The chapter on noncancerous oral disease is the first Public Health Service review of this subject. The data available lead to the conclusion that ulceromembranous gingivitis, alveolar bone loss, and stomatitis nicotina are more commonly found among smokers than among non-smokers. The influence of smoking on peridontal disease and gingivitis probably operates in conjunction with poor oral hygiene. In addition, there is evidence that smoking may be associated with edentulism and delayed socket healing.

Tobacco smoke contains a large number and a wide variety of compounds which may result in complex and multiple pathophysiological effects on the various tissues and organ systems. While further research is needed to investigate the exact biomechanisms involved in the pathological effects of smoking, the evidence clearly shows that cigarette smoking constitutes a major health hazard in the United States.



EDITORIAL

Para-Medical Personnel Related to the Nurse and the Physician

Alfred Kahn, Jr., M.D.

The matter of nursing and para-medical personnel can be discussed intelligently if it is viewed in terms of a total social pattern. Stating this another way, one might have perfected an excellent program of action for nursing and para-medical personnel for Russia that would be totally unacceptable for the U.S.A. A nursing and para-medical personnel program for a developing country in Africa would still be different from a good program in England or Scandinavia. Furthermore, one has to take in account that the program has to be current for any given country or community. A program of nursing and para-medical personnel suitable for the 1920's will not work well in the 1970's. Lastly, the historic development of the general fields of medical training, nursing and para-medical training might dictate certain aspects of the program.

Picture Arkansas medicine 75 years ago. The average physician had a rather disjointed background of medical training. He probably had one year of internship or apprenticeship, but he could practice without this. He carried most of his instruments in a black bag, as very little elective surgery was done; except in a few central locations. There were few drugs and the physician dispensed his own medications in many instances. Most treatments were performed in the office or home. The physician's rent for an office was low, his transportation was cheap. He seldom made much money, and thus was seldom the target of a suit. Obviously, a physician with limited training could not do a lot himself, and he did not require a helper who knew much technical information. In other words, nursing and para-medical help was limited to people who had very little technical skill—except in medical centers (such as the old St. Vincent Infirmary).

Thirty years ago, the physicians were fairly well trained. There were very limited insurance programs for health and accidents. The result of this combination plus certain other social forces resulted in a competition for the patient; we were not then an affluent society. Physicians saw fewer patients; there were fewer patients hospitalized. The physician was not so hurried or harried. Available to him was an adequate supply of excellently trained professional nurses, who had received 3 years of intensive work in a hospital in order to become a registered nurse. There was an adequate supply of para-medical help of high quality if the physician could afford to pay for the service—and many could not.

Let's look at 1970. We have an affluent society. We have hospital programs for almost everyone. The physicians no longer compete for the patient. The patient has to compete for the physician. The result of vectoring the forces of hospital insurance, affluent people, technical progress in laboratory tests, X-rays, surgery, etc., means that the physician has more and more factors competing for his time. He must see patients, do laboratory tests, do X-rays, operate, etc. Furthermore, the physician has to pay for an office, for instruments of an elaborate nature, transportation, and so on; this means his time has to be remunerative, commensurate with the costs of his practice. As a result, there gets to be a lag in the physician's ability to see all the patients that want to be seen. Furthermore, some procedures are so well standardized that

they do not require a physician to perform them and there is a group of trained people who can step into this void, namely nurses and para-medical personnel. The problem that then faces contemporary America is how can we offer a balanced program of medical services to a public that needs and demands good medical care.

If we want to offer better and more balanced medical care then we have to examine our resources. The immediate answer is that there is a shortage and maldistribution of physicians based on both the current population and the number of physicians in the future available for our rapidly expanding population. Physicians take a long time to train and even if a gigantic effort is made to increase the number of physicians, it takes one to ten years to organize a new medical school and a minimum of five years to train the physician in medical school and a one year internship. To meet the demands for an increased number of physicians will take years. What are the alternatives that are attainable in a short period of time?

The most obvious answer is the training of nurses and para-medical personnel to levels where they can perform certain specific duties which are now performed by the physician. This plan can work, only if it is clearly understood that the performance of the nurses and the para-medical personnel must be of a suitably high standard. Without high standards of performance, this type of program would be far more deleterious than beneficial. Thus this implies that for this expansion of medical duties by nurses and para-medical personnel, good education facilities have to be made available and regulatory bodies have to be empowered to supervise both the training program and the licensing of the individual seeking recognition for a certificate of competence.

Basically what I am suggesting is that the best medical care of the public is going to be accomplished through a team effort in which a spectrum of medial skills is going to be offered and in which there will be also a spectrum of competence in each field based on education and experience. The leader in this team effort will have to always be a qualified physician as the legal, and the moral, and the ethical responsibility of the patient is his. The physician is entrusted the ultimate responsibility for the patient because of his more extensive training and experience. The physician as team leader will then have a complement of nurses and para-medical personnel to extend the number of patients who are cared for and also to provide treatments that the physician cannot, due to time limitations, and in many instances the nurses and para-medical personnel can perform better anyway.

This brings us to the point of how can we reasonably enlarge the duties of the nurses and para-medical personnel?

First of all with regard to nursing in the broad sense of the work, it has to be a team effort. With crowded hospitals and a training program that is running behind demands, there are simply not enough registered nurses to go around as there were in the late 40's and the 50's. As a consequence, the care of the patient can best be provided by a group of people who are trained to different levels of competence; there should be 1, 2, and 3 year training programs. Since it will be easier to get through the one year program there will be a larger number than a 3 year trainee. Different degrees of responsibility should be delegated on training and experience. Of particular importance is an adequate system of nomenclature. Actually, the hospitals are doing this. Thus the professional nurse from the 3 year program can be freed from less important duties to do such intricate programs as coronary care nursing, intensive care nursing, etc. There certainly ought to be some B.A.'s and M.A.'s in nursing who could be delegated responsibility beyond a 3 year trainee as in giving medications, operating coronary care units, intensive care units, airway intubation, programming progressive increases in diets and activities of recovering patients, supervision of other nurses, etc.

Of particular value would be a nurse with superior training in the fields of public health. This would imply extra training in preventative medicine, especially in communicable diseases. It would also demand additional training in industrial hazards such as chemicals and pollutants; the protection of the employer from hazardous machinery is a vast important field. For the same reasons, this nurse would need some knowledge of when to request diagnostic X-rays. She would have to have special knowledge of dietetics in certain regions where there are overt and hidden hungers. Some training in psychiatry would be a great asset for obvious reasons.

Parallel with the elevation of public health

nurses capacity could be the development of what is called in Eastern Europe a feldscher. A feldscher is a person who might loosely be defined as a physician's assistant who might operate at a geographically distant spot from the physician. This individual, if well trained, might make certain medical determinations and perform certain simple medical acts in areas where there is no physician to be found. Better transportation and communication tend to reduce the necessity for this type of training. Nevertheless, what is a rural community to do that has no nearby physician to perform first-aid and give simple medications based on observation and easy to run laboratory tests? Maybe the idea of the feldscher should be extended to cities. It is difficult to get house calls for routine recovery cases and for the care of the chronically ill. The idea of the feldscher may not be feasible in our society, but perhaps before discarding it a thorough study in depth should be made.

There is a very significant need for someone like a feldscher in the office of many physicians. Stop and think about the well known statistic that more than 50% of the diagnoses made in physicians' offices are for either neuroses or milder illnesses. Add to this the dilution of the physician's time by telephone calls for minor problems or instructions and it readily becomes apparent that the community is not making the best use of the physician services. If there were an individual with less extensive training than a physician who could answer telephone calls, phone prescriptions, arrange referral visits, alter the amount of medication by prescribed plan, clean and dress minor wounds after inspection by a physician, etc., it would facilitate speedier patient care. If there is a shortage of physicians then the next best thing to having more physicians would be to make the physician's day more efficient by delegating as many minor procedures as possible to a well trained, non-physician assistant. The curriculum to train such individuals would of necessity have to be stringent; it would consist of parts of the training program of the School of Nursing, School of Radiologic Technology, School of Laboratory Technology, plus the training in some specific medical procedures; in addition, there should be some secretarial training. Actually many physicians have trained personnel to be a true physician's assistant out of necessity.

The training of laboratory and X-ray technologists poses somewhat similar problems. Currently there is a maldistribution of and relative lack of both X-ray and laboratory technologists. This shortage is due to the elaborate facilities necessary to train such personnel, and the cost to the trainee and the institution. Actually an answer to this problem that has not received adequate consideration is whether we are tailoring the training program to the total needs of the total medical community. Putting this a different way: A physician in a small community in Arkansas needs a small laboratory to do blood sugars, BUN's, blood counts, urinalyses; the things that are done have to be done well but the number of things that are done are limited by time and the needs of a general physician. Manifestly, a general physician in a small community does not need a laboratory technologist with the involved training that a hospital laboratory technologist is given. Thus the need in laboratory technology today is at least three levels of training; a course designed for general physicians, a course designed for internists who need more elaborate tests but who do not need the most intricate procedures, and lastly, the hospital based technologist who can perform all of the current investigative tests. This would give an opportunity to young people with limited educational backgrounds a chance to get in medical technology. Most of all it would prevent physicians from emptying the hospitals of their highly trained laboratory technologists. The same reasoning, of training to different levels of competence, applies to radiologic technologists for the same causes.

Lastly, midwives are a necessity in rural areas where there are no physicians and poor transportation. Since they are going to be used they ought to be trained to proficiency in normal deliveries and trained to recognize abnormal situations where expert attention is needed. The question here is should such persons be nurses with additional training or should they be individuals trained specifically for this job. Obviously, the better the training, the better the infant mortality which is lamentably high in America for various reasons, other than just obstetric care.

Of paramount importance in the training of nurses and para-medical personnel are the questions who is going to pay for the training and where is it going to be performed. With regard

to the "who," it should be pointed out that every medical school is subsidized by either direct or indirect means by both the government and private individuals. Assuming a $5,000,000 budget at many smaller medical school complexes and a tuition of $1,000 to $2,000 per year being paid by 100 medical students, there is obviously a large debit even if the affiliated teaching hospital has paying patients. With regard to the "where," the question is whether it would be wiser as well as economically more feasible to have a central school to train these technologists or if the current program of in-hospital training is better; there are strong arguments on both sides. The realism of dealing with patients in a hospital is difficult to duplicate in a big central facility. It is like a biology course without an accompanying laboratory course which often results in teaching facts without teaching understanding.

There are no pat answers for the problems in this discussion, many of the ideas have already been in practice. Some have been tried and found wanting. Basically, the underlying theme of this discussion is to train people to the level of competence needed for the job and since individual abilities and the needs of different fields of work require varying levels of training, there should be a spectrum of training levels in each field.

Lastly, I would like to make a plea to the nursing and allied professions to develop a standardized system of nomenclature for every level of competence in every field. This would be helpful to the individual and necessary for the employer so that he could get proper assignment of duties.

ANSWER—Electrocardiogram of the Month

RATE: V: App. 70 RHYTHM: Paroxysmol atrial tachycardia c block.

A: 200

PR: .... sec. QRS: 11 sec. QT: .31 sec.

SIGNIFICANT ABNORMALITIES:

P-P interval .30.

Delay in left ventricular depolarizatian c prolonged QRS.

INTERPRETATION: Abnormal.

Paroxysmal otrial tachycardio c voriable black.

1-V canduction disturbance (peri-inforctian black).

ANSWER—Radiology Case of the Month

DIAGNOSIS:

Enchondromo.

DISCUSSION:

The tumor is composed of mature hyoline cartiloge. Quite frequently these tumors are asymptomotic. Pothologic fracture does occur. Pain and naticeable swelling are uncomman, but do occur.

Abaut 10% of benign bone tumors are enchondramas. One-half of these ore faund in the hands and feet. There is no oge ar sex predominance.

These tumors usuolly present rodiographicolly as a well-circumscribed centrol lucency in the involved bone. They usually are diophyseal in locotion and may contain slight to prominent mottled or stippled calcification. They moy be eccentric and the cortex may be expanded but intact, unless frocture hos occurred.

The syndrame of multiple enchondromas (usually unilaterol) and ossaciated bone deformity is called Ollier's Disease.

The usuol treatment is complete excisian or curettage and packing with bone chips. Recurrence is unusuol but moy accur. Occosianally these tumors underga malignont degeneration ond become chondrosarcamas (mare common in Ollier's Disease).

REFERENCES:

1) Dohlin, D. C.: Bane Tumors. Chorles C Thomos Compony, 1967, pp. 28-37.
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MEDICINE IN THE NEWS

THE MONTH IN WASHINGTON

Washington—The Senate Finance Committee approved a staff report on Medicare and Medicaid which was critical of both physicians and administration of the health care programs. It included a recommendation for fee schedules for physicians' services.

In a joint statement, the presidents of the American Medical Association and the National Medical Association pledged support of their organizations to the committee's efforts to correct deficiencies and abuses in the two programs. However, the two spokesmen for organized medicine said "It would be tragic if . . . regulations were adopted whose effect would be to deny a greatly improved level of health care to the ghettos."

The AMA-NMA statement said that "We were greatly encouraged by the committee's comment that it 'believes that the majority of physicians for whom information was requested with respect to Medicare and Medicaid as presently structured have dealt fairly with these federal programs and with the federal government'."

In regard to abuses and fraud, the statement said:

"Where these abuses exist, they must be rooted out. Both the AMA and the NMA are prepared to take very vigorous action within their power to help the committee and the government accomplish this."

It was noted that the committee had denied an AMA request many months ago that it be given the names of physicians involved in the committee's investigation.

"Despite this," the statement said, the AMA and the NMA through their own resources have been able to identify a number of physicians grossing more than $25,000 in these programs. . . .

"In some instances, medical societies had already taken appropriate action against individual physicians where the evidence warranted. In other instances, however, the AMA and the NMA have found that many of the physicians presumably included in the committee's study are dedicated physicians working in isolation in slum and rural areas who are literally being overwhelmed by a tide of sick humanity. . . .

"We therefore believe it would be unfortunate if the committee's report leads the public to believe that Medicare and Medicaid are riddled with fraud or that the number of physicians abusing the programs is large. Such is not the case. . . ."

The report said that incomplete and partial listings indicated 4,300 individual practitioners plus an additional 900 physician groups each received at least $25,000 from Medicare in 1968, including 68 who received $100,000 or more. The report also included a long list of physicians by state receiving $25,000 or more from Medicaid in 1968. None was named; listings were by code numbers.

* * *

"Hundreds of the payments profiles indicate that the physicians involved might be abusing the program," the report said. "For example, we found many general practitioners each paid $15,000, $20,000, or more for laboratory services. We found large payments being made for what appear to be inordinate numbers of injections. In many cases we found what is apparently overvisiting and gang-visiting of patients in hospitals and nursing homes.

The staff believes that the majority of physicians on whom information was gathered provided medically necessary services for which they were entitled to charge and be reimbursed. On the other hand, Medicare's payments structure did little to discourage—in fact, it encouraged—high fees, and thus may well have contributed to the very substantial payment totals to those same physicians."

Recently, the Social Security Administration reported that about 2,500 cases had been investigated for fraud or abuse during the first three and one-half years of Medicare. It was empha-

sized that this was only a minuscule fraction of total Medicare transactions. Social Security Commissioner Robert M. Ball said:

"Medicare pays about 30 million doctors' bills and 12 million bills from institutional providers of services each year. It is clear from our investigations that the number of attempts at fraud or abuse is relatively very small."

About half of the cases investigated, he said, resulted from clerical errors, misunderstandings or honest mistakes by physicians and health services. To January 20, 1970, the SSA had referred the cases of 13 individuals and organizations to the Justice Department with recommendations for criminal prosecution for fraud. Two physicians have been convicted in U. S. District Courts and indictments have been returned against another five physicians and one nonphysician. Another five cases had been referred with recommendations that civil proceedings be started for the return of illegally collected funds. Early this year, Social Security investigators also were preparing an additional 35 possible fraud cases for referral to the Justice Department.

The most common types of alleged violations reported include physicians and providers billing for services not rendered, excessive charges, alteration of bills, duplicate billing, misrepresentation of types of services or dates of services, unreported discounts, or kickbacks, and employee embezzlement, Medicare officials said.

The report's recommendations were aimed at providing "bases for remedying the serious, costly, and pervasive problems" of the two programs and make them "work more efficiently and economically." However, it was conceded that physicians constitute the cardinal factor.

"The key to making the present system workable and acceptable is the physician and his medical society," the committee staff said. "We are persuaded that at this point in time neither the government nor its agents have the capacity to effectively audit medical practice to assure that a given physician functions responsibly in dealing with the publicly financed programs.

"While there is growing awareness among many physicians of the need for the profession to effectively police and discipline itself, performance has been spotty and isolated so far. Prompt action is necessary by organized medicine (and other health professions) to do what is required with respect to monitoring care provided and charges made for the care. . . .

"However, procedures which involve peer review should not be undertaken without precise spelling out and assurances that such review will be comprehensive and effective—not paper and token."

Report recommendations:

—Fee schedules for physicians' services.

—Generic prescribing of drugs.

—"Curb overutilization by requiring prior professional approval of elective procedures and expensive courses of treatment."

—Require the patient to name a "primary physician" to end "costly 'doctor shopping'."

—Require states to provide Medicaid recipients with statements outlining payments made in their behalf.

—Modify present law "to make practicable reasonable cost-sharing payments by the medically indigent."

—Prohibit independent collection and discount agencies from collecting Medicaid or Medicare due bills that providers have sold to them.

—Improve federal administration, and establish cooperative arrangements with and between states.

—Establish a Medicaid fraud and abuse unit in HEW, and require states to establish similar units.

—Combine the Medicare and Medicaid advisory councils.

* * *

The American Medical Association urged changes in proposed regulations concerning fraud under the Medicaid program.

"While we do not condone in any way any fraudulent conduct of physicians in Title XIX (Medicaid) or in any professional activity, we do believe that physicians will consider the new requirements an unwarranted affront to their integrity in their participation in the program," Dr. Ernest B. Howard, executive vice president of the AMA, said in a letter to John D. Twiname, acting administrator of the Medicaid program.

One of the proposed regulations would require physicians to sign form statements certifying that their claims were correct and that they understood fraud could subject them to prosecution.

These statements, Dr. Howard said, would serve no useful purpose because physicians already know that false claims could lead to prosecution. On the other hand, the regulation

would be "regarded as offensive by many physicians since it obviously impugns their integrity," the AMA letter said.

The other proposed regulation would require state agencies to promptly report suspected cases of fraud.

"It is obvious that serious prejudice may result to a physician where the suspicion of fraud is publicized," the AMA said. "Even when the fraud is not later established, irreparable harm to the reputation of the physician will still have resulted. . . . We believe it will be better procedure not to report each suspected case, but to include in the report only those situations where the case has been concluded and fraud has been established."

* * *

The Nixon Administration submitted a fiscal 1971 budget calling for federal expenditures of $20.6 billion from general revenues for health purposes, an increase of $1.8 billion over current spending levels. Medicaid and Medicare Part B (physicians' services) accounted for much of the increase.

The overall Medicare budget, including Part A (hospitalization), increased by $1.2 billion to $8.8 billion. Estimated Medicaid costs to the federal government rose from $2.6 billion to $3.1 billion. However, the Administration hopes to cut the Medicaid budget by $235 million by getting Congress to approve elimination of federal aid for extended care in mental institutions and nursing homes.

The budget for the current 1970 fiscal year, ending next June 30, still had not been approved when the new budget was submitted. Congress upheld President Nixon's veto of the appropriations for the departments of labor and of health, education and welfare on the ground that it was inflationary. The main funds at issue were educational aid for the federally impacted areas. The Administration and Congressional leaders negotiated a compromise.

In the 1971 budget, the lid was kept on health research spending by holding the overall increased funds requested for the National Institutes of Health to $48 million. Some of the institutes' programs were cut and others given only small increases. Cancer research was allotted the largest increase, $28 million, pushing the 1971 budget for the program to $202.3 million. Heart research and child health research were increased by $17 million each.

Increases totaling $15.4 million were asked for alcoholism and drug addiction programs.

The Food and Drug Administration budget was upped by 10 per cent, from $81.3 million to $89.5 million. Of this hike, nearly $2 million would be used to check safety of food additives and $2.2 billion for research on cancer and birth defects in animals exposed to pesticides.

A boost of $12.4 million, to $57.4 million, was requested for health services research and development projects "directed primarily at containing the rate of increase of medical care costs and improving the availability and utilization of health care especially for low income groups." The federal programs in this field include: the development of alternatives to long-term stays in hospitals; experiments with private insurance firms to develop additional policies to encourage out-of-hospital care; experiments with comprehensive prepayment plans; improvement of municipal hospital systems, and development of new types of health service manpower.

An increase of $25 million, to $320 million, was requested for health professions education and manpower training programs.

* * *

The pros and cons, with emphasis on the cons, of birth control pills were aired at a Senate subcommittee hearing.

Most of the physician witnesses at four days of hearings by the Senate Antimonopoly Subcommittee testified that not enough attention had been paid to side effects. They urged that both physicians and drug companies be more diligent in calling patients' attention to the possible dangers in taking oral contraceptives.

Some of the witnesses expressed strong concern or alarm as to side effects. Others defended the oral contraceptives.

Developments related to the hearings included:

—The Food and Drug Administration revived its birth control advisory committee which last fall concluded that the benefits of oral contraceptives outweighed the possible dangers so heavily that they could be evaluated as "safe." Dr. Roy Hertz, New York, N. Y., a critical witness before the subcommittee, was named temporary chairman.

—In advising physicians about the new labeling, the new FDA commissioner, Dr. Charles C. Edwards, urged that patients be given full information about potential adverse effects.

—The American College of Obstetricians and Gynecologists said it "deplored inaccurate or sensational reports concerning the scientific data on these drugs." The pills were termed "accepted therapeutic methods."

—Dr. E. B. Howard, executive vice president of AMA, in a televised interview, urged American women to be calm in the face of the wide publicity about side effects and follow the orders of their physicians.

—The AMA's Council on Drugs said: "Oral contraceptives should continue to be prescribed by physicians for patients who require this type of contraception. However, we urge that patients be advised that there are certain risks involved—the slight risk of vascular damage and the theoretical risk of carcinoma."

* * *

Report of Committee on Aging Arkansas Medical Society

This committee met at the Marion Hotel, Little Rock, on the morning of November 23, 1969, with one member present, and two other Society members participating.

The Statement of Purpose of Committee on Aging as outlined by the AMA was read and discussed. The concensus of the group was that your committee should limit its activity for the current year to the problem of medical certification of elderly drivers as to competence to operate a motor vehicle, and as to insurability against accident.

In this respect, a resolution was formulated by the committee to the effect that renewability of a person's insurance and/or of his license to drive should be passed upon medically by the physician, but that an individual's qualifications for driving a motor vehicle should be left to an authorized representative of the state, who should make the determination without prejudice based on the individual's chronological age. A rough draft of this was forwarded by your committee to the House of Delegates meeting.

There followed a discussion of work needing to be done in the field of aging, through physicians and para-medical professions. Use was mentioned of the U. of A. Medical Center, of county medical societies and of publications. A principal objective would be to convince both practicing physician and layman that medical attention and programming should not be deferred in the case of an ill person simply because he is old.

As in last year's committee report, the committee recommended that its services be offered to consult with health and welfare departments, hospitals and extended care facilities, and wherever comprehensive health planning is undertaken.

The publication of articles on aging in the State Medical Journal was urged—in particular, case reports of instances of longevity. The death of any individual over 100, the group agreed, was to be considered reportable.

A brief summary was given of a Seminar On The Need For A Specific Ministry To The Aging, held October 16 and 17, 1969, at Southern Pines, N. C., which had been attended by the chairman.

Respectfully submitted,
Woodbridge E. Morris, Chairman
Robert Etherington, Eureka Springs
John Guenther, Mountain Home
Joseph Norton, Little Rock
Thomas Wortham, Jacksonvil'e

Biographical Solicitations

It is reported that solicitations are again being received by Arkansas physicians requesting biographical information which may be used in a proposed publication entitled "Who is Who in Arkansas Medicine".

Arkansas Medical Society legal counsel feels, after consultation with the Legal Department of the American Medical Association, that such listings by physicians would be considered unethical.

Physician-Nurse Meeting Held in Little Rock

A joint meeting of the Arkansas Medical Society and the Arkansas State Nurses Association was held in a one-day session February 15th at St. Vincent Infirmary in Little Rock. The Society's Liaison Committee for Nursing, chaired by Dr. Frank T. Padberg, was responsible for program planning and arrangements for the excellent exchange between the physicians and nurses in attendance. Making formal presentations for the Arkansas Medical Society were Dr. Jasper McPhail and Dr. Alfred Kahn, Jr., of Little Rock, Dr. Walter Wilkins of Pine Bluff, and Dr. James D. Harbison of Dardanelle. Dr. Padberg acted as moderator throughout the program.

Participating in the meeting for the Nurses Association were Mrs. N. J. Goss, Mrs. Betty Dunn, and Mrs. Nancy Strand, all of Little Rock;

Mrs. Lilliam Owen, Pine Bluff, and Mrs. Anne Wilson of Warren.

Group Votes for Tuberculosis Consolidation

A group of Arkansas physicians and interested laymen voted for endorsement of the goal of consolidating the State's tuberculosis control program within one agency at an early March meeting. The meeting was called together by Robert H. Schnee, executive director of the Arkansas Tuberculosis and Respiratory Disease Association.

White House Conference on Food, Nutrition and Health

REPORT BY DR. T. C. PANOS

Little Rock

The White House Conference on Food, Nutrition and Health consisted of approximately 3,000 invited individuals from every conceivable walk of life, including all of the health and health allied professions, food growers and processors, food handlers, organized labor, a variety of organized labor, a variety of organized groups of the poor and underprivileged, as well as a number of individual representatives of the poor, etc.

Although the Conference was obviously a major effort in organization and involved the participation of a very large number of experts in a variety of fields, the actual results of the conference remain to be demonstrated.

The outstanding result, as evaluated by conversations with a large number of other participants, was the reinforcement and re-emphasis of the magnitude of the problem of poverty, starvation and malnutrition in the United States. Among those in the medical profession, this has been known for many years but the Conference did serve to accent this fact. An aura which seemed to pervade the whole conference was that, although there are many extenuating circumstances and explanations, there were no longer any real excuses for such poverty and starvation. Somehow, Americans would have to mobilize the totality of their social forces in order to overcome this problem.

Another very impressive result of the conference was the demonstration of the inefficiency and inadequacy of implementation of a variety of programs intended to provide food for families and for breakfast and lunch programs. Analysis of statistics from all over the country provided ample confirmation of this. There was a widespread reaction and definite consensus that this is an area that really needed improved implementation. Much of the improvement which might result would not involve a great deal of additional expenditure but a more organized, sincere and less bureaucratic approach to helping the poor.

As might have been expected, many of the groups engaged in discussions of everything from birth control to the major problem of overeating, obesity and the malnutrition of overnutrition. It apparently became apparent that there was a very large number of small (petty) as well as large bureaucracies and bureaucrats involved in handling some of the programs that have been made available.

President Nixon, in his opening remarks, indicated that the existence of hunger is a major disaster in the United States, and thus set the tone of the Conference. He declared "this meeting sets the seal of emergency on the national commitment to put an end to hunger and malnutrition due to poverty here in America." The immediate results of the conference remain to be determined. The publication of a formal report required several weeks. Whether or not there will be a follow-up conference as indicated by President Nixon, remains to be seen.

My own specific participation was with the sub-group of Panel I which had as its assigned topic "The Nutrition of Vulnerable Groups: Pregnant and Nursing Women and Young Infants". This particular group spent hours in active, very informative, stimulating discussion related to specific subjects under this heading. The members of this group agreed that the highest priority for the country was the urgency of doing something as soon as possible to help overcome poverty and malnutrition. They also felt that something should be done to simplify the mechanisms of implementation as well as for evaluation and monitoring of effectiveness. There was definite agreement that the problems of manpower shortage and need for more and new services also represented major problems. The subject of guaranteed annual income arose and there was considerable discussion about this. The majority vote of the group was agreed that some guaranteed annual income would be a very advisable thing in the future to prevent poverty and malnutrition.

This report is intended to indicate what happened at the White House Conference and to

forward its conclusions and recommendations. The study of special needs in Arkansas would represent a natural follow-up to this conference, and should there be a desire for such a follow-up report, I will be happy to provide it.

Pediatric Allergy Clinic

The February 1970 issue of the Journal carried a "letter to the editor" from Dr. Vida H. Gordon, Director of the Pediatric Allergy Training Program at the University of Arkansas Medical Center. In a later letter, Dr. Gordon calls attention to the fact that Dr. Gilbert Buchanan of Little Rock contributes greatly to the weekly Pediatric Allergy Clinic Program.



PERSONAL AND NEWS ITEMS

Dr. Crow Elected to School Board

Dr. Neil E. Crow has been elected to a three-year term on the Fort Smith School Board. Dr. Crow received more than seventy per cent of the total vote cast by citizens of Fort Smith.

State Police Praise Physicians in Beebe

A spokesman for the Arkansas State Police commended the services of two White County Medical Society members, Doctors Garrett Kinley and Lloyd Norris of Beebe, for their provision of on-the-scene medical assistance to accident victims in that area of the State.

Award for Twenty Years of Service

The Crossett Health Center recently honored four Crossett doctors in recognition of twenty or more years of service to that community. They were: Dr. W. R. Cothern, Dr. R. L. Salb, Dr. W. A. Regnier, and Dr. E. C. Gresham (deceased).

Dr. Burton is Rotary President

Dr. Frank M. Burton of Hot Springs has been installed as president of that city's Rotary Club for 1970-71.

Dr. Hogue elected to Bank Board

Dr. E. L. Hogue of Jonesboro has been elected to the Board of Directors of the Bank of Weiner.

Dr. Clopton is Guest Speaker

Dr. O. H. Clopton, Jr., of Jonesboro, was the guest speaker at the first state meeting of the Arkansas Society of American Medical Technologists. His subject for the group, which met in Jonesboro February 21-22, was "Resuscitation Methods".

Doctors Attend Refresher Course

Dr. Millard E. Edds of Van Buren and Dr. R. H. Langston of Harrison were among the sixty-two physicians attending the second of two family practice refresher courses held at the University of Arkansas Medical Center in Little Rock. The February session and an earlier one in January were sponsored by the Medical Center as part of its continuing education program. They were also designed to assist physicians planning to seek certification from the newly-created American Board of Family Practice which held its first examinations February 28-March 1.

Dr. R. L. Johnston Featured

Dr. R. L. Johnson of Blytheville was recently the subject of a lengthy newspaper feature article in the TIMES of Osceola, which interviewed him on his eighty-second birthday. Remembering his more than fifty years of medical practice, Dr. Johnson said that he had delivered over six thousand babies and commented: "my work was day or night and everyday was a work day."



PROCEEDINGS OF SOCIETIES

Cross County Sponsors Emergency Care Course

The Cross County Medical Society, cooperating with the Arkansas State Health Department, spon-

sored a three-day course on emergency care and transportation of the sick and injured. Held March 10-12 in Wynne, the sessions were open to all residents of both Cross and Crittenden counties.



NEW MEMBERS

DR. CAGLE HARRENDORF is a new member of the Lafayette County Medical Society. He is a native of Van Buren.

Dr. Harrendorf received the B.S. degree in pharmacy from the University of Arkansas School of Pharmacy in 1957 and his Master's degree from that university in 1959. In 1966, he was graduated from the University of Arkansas School of Medicine and interned at St. Vincent Infirmary in Little Rock.

Dr. Harrendorf has served two years active duty with the United States Air Force prior to his settling in Stamps.

Engaged in general practice, Dr. Harrendorf's office address is Main Street, Stamps.

The Howard-Pike County Medical Society announces the addition of two physicians to its membership rolls. They are Doctors Jerry Baxter Stringfellow and James O'dell Turberville.

DR. JERRY BAXTER STRINGFELLOW was born in Hampton and gained his pre-medical education at the University of Arkansas and Henderson State Teachers College from 1958 to 1962. Entering the University of Arkansas School of Medicine, Dr. Stringfellow was graduated from the institution in 1966. Subsequently, he completed an internship at Duval County Medical Center in Jacksonville, Florida, and a residency in surgery at the University of Baylor School of Medicine, where he held a teaching appointment.

Dr. Stringfellow served two years duty with the United States Air Force.

Dr. Stringfellow is associated with Dr. Marion Wilmoth in general practice at 14 Leslie Street, Nashville.

DR. JAMES O'DELL TURBERVILLE, originally a native of Oklahoma, has recently located in Nashville, moving from Leesville, Virginia.

Dr. Turberville received his pre-medical instruction at Texarkana Junior College and Henderson State Teachers College. In 1963, he entered the University of Arkansas School of Medicine and was graduated from that school in 1967. An internship was then done at St. Vincent Infirmary in Little Rock.

Dr. Tuberville has recently finished his active duty with the United States Army. Associated with Dr. J. H. Wesson, Dr. Tuberville is in general practice, located at 120 West Sypert Street.

DR. WILLIAM W. DOUGLAS, formerly of Birmingham, Alabama, is a new member of the Union County Medical Society.

Gaining his B.S. degree from Birmingham Southern College and his M.S. from the University of Alabama, Dr. Douglas was graduated from the Medical College of Alabama in 1953. Internship was done at Philadelphia General Hospital, Philadelphia, Pennsylvania. Two residencies in obstetrics and gynecology were completed at Charity Hospital, New Orleans, Louisiana, and the University of Oklahoma School of Medicine, Oklahoma City, Oklahoma, respectively. A residency in psychiatry was also completed at the Veterans Administration Hospital in North Little Rock.

Dr. Douglas formerly has been a clinical instructor at the University of Arkansas Medical Center and Chief of the Day Treatment Center of the Veterans Administration Hospital in North Little Rock. He is a member of the American Psychiatric Association, Arkansas Psychiatric Association, American Medical Association, and the Mid-Continent Psychiatric Association.

Dr. Douglas practices psychiatry with offices at 490 West Faulkner Street in El Dorado.

DR. WAYNE GORDON ELLIOT is also a new member of the Union County Medical Society. Born in Monroe, Louisiana, Dr. Elliot practiced in Vicksburg, Mississippi, prior to relocating in El Dorado.

Upon graduation from Northeast Louisiana State College with the B.S. degree, Dr. Elliot

completed the M.D. degree from Louisiana State University School of Medicine in 1961. He then interned at Southern Pacific General Hospital in San Francisco, California; and, subsequently, a residency was done at Charity Hospital at New Orleans, Louisiana. A former officer of the United States Air Force, Dr. Elliot is now board certified in anatomic and clinical pathology.

Dr. Elliot is a Fellow of the College of American Pathology and a junior member of the American Society of Clinical Pathologists. Dr. Elliot is associated with Dr. Kenneth R. Duzan at 443 West Oak, El Dorado, Arkansas.

The third new member of the Union County Medical Society is DR. REUBEN CARROLL SETLIFF, III, who is a native of El Dorado.

Dr. Setliff graduated from Ouachita Baptist College in 1960 and then matriculated at the University of Arkansas School of Medicine. That instiution conferred the M.D. degree upon Dr. Setliff in 1964, whereupon he interned there at the Medical Center in Little Rock. A residency in general surgery was finished in 1966 at the University of Texas Medical Branch Hospital, Galveston, Texas. Dr. Setliff then entered upon a three-year residency in otolaryngology at Vanderbilt University Hospital in Nashville, Tennessee.

Currently a member of the American Council of Otolarynology and board eligible, Dr. Setliff is practicing that specialty at 304 East Peach Street in El Dorado.

Metabolic Clearance and Production Rates of Human Growth Hormone

A. L. Taylor, J. L. Finster, and D. H. Mintz (Univ of Pittsburgh School of Medicine, Pittsburgh)

J Clin Invest 48:2349-2358 (Dec) 1969

The metabolic clearance rate (MCR) of human growth hormone (HGH) was determined by the constant-infusion-to-equilibrium technique utilizing HGH-^{125}I. Twenty-two control subjects had a MCR of 229 ± 52 ml/min (mean ± SD). No difference was evident between sexes, or between various age groups. Patients with acromegaly demonstrated normal MCRs. In six patients with hypothyroidism the MCR (131 ± 36 ml/min) was significantly decreased, whereas the MCR in eight patients with hyperthyroidism (240 ± 57 ml/min) did not differ from control subjects. The MCR in eight patients with insulin-independent diabetes mellitus (185 ± 41 ml/min) and in eight patients with insulin-dependent diabetes mellitus (136 ± 31 ml/ min) was significantly different from control subjects.

Peripheral Subresponsiveness to Human Growth Hormone in African Pygmies

D. L. Rimoin et al (Washington Univ, St Louis)

New Eng J Med 281:1383-1388 (Dec 18) 1969

The African pygmies, an ethnic group characterized by proportionate shortness of stature, attain normal plasma concentrations of human growth hormone (HGH) following arginine infusion and insulin-induced hypoglycemia. Their plasma insulin and glucose responses to these stimuli, however, are similar to those of HGH-deficient dwarfs. The administration of exogenous HGH to normal and HGH-deficient individuals provokes three characteristic responses: a rise in plasma free fatty acid concentration, an increase in the plasma insulin response to arginine infusion and glucose ingestion, and a fall in the serum urea nitrogen concentration. HGH administration to 19 pygmies failed to induce any of these three responses. Sulfation factor activity in the pygmies, however, did not differ from that found in normal controls. These observations indicate that the pygmies have end-organ subresponsiveness to the metabolic effects of HGH.

TUBERCULOSIS  ABSTRACTS

Sponsored by Arkansas Tuberculosis and Respiratory Disease Association

EMERGENCE OF GRAM-NEGATIVE PHARYNGEAL FLORA IN HOSPITALIZED PATIENTS

Rise in gram-negative flora in the pharynx correlated much more closely with severity of illness than with hospital exposure. Concomitant diminished clearance of bacteria among the critically ill suggests mechanism of pathogenic infiltration of the lungs.

Pneumonia due to gram-negative bacilli still poses a major threat to hospitalized patients. Numerous investigations into the spread of nosocomial bacterial pneumonia have failed to uncover a pathogenic flora unique to a hospital setting, or to identify common pathogens in the hospital environment. These findings suggest that the infecting agents are endogenous to the patient.

Most pathogens probably migrate from the oropharynx into the lungs. Mechanism of entry may be by aspiration of pharyngeal fluid into the lungs. This phenomenon is known to occur in healthy persons during sleep. Thus, gramnegative bacilli in the oropharynx could possibly serve as a harbinger of nosocomial pneumonia.

The present study was undertaken to ascertain the prevalence of gram-negative bacilli in the oropharynx of normal subjects and hospitalized patients with illnesses of varying severity.

Five groups of adult subjects were selected for study. These included 82 nonhospital-associated normal subjects (firemen), 47 hospital-associated normal subjects (physicians and hospital-ward personnel), and 20 physically normal hospitalized psychiatric patients. Also included were 81 moderately ill hospitalized patients on the orthopedic-surgery service and 23 critically ill on the medical service. None of the normal subjects had received antibiotics for two weeks before the culture period.

Oropharyngeal cultures were obtained with an area-sampling device, and the isolated pathogens identified by standard technics.

COLONIZATION OF BACILLI

On the first culture, prevalence of gram-negative bacilli was shown to be the same (2 per cent) for the nonhospital and the hospital-associated subjects despite a gradation in exposure to the hospital environment from none to intermittent. No bacilli were isolated from the 20 hospitalized psychiatric patients.

At the same time, prevalence of gram-negative bacilli was striking for the moderately ill (16 per cent) and for the severely ill (57 per cent).

Repeated cultures, however, showed a cumulative percentage rise for all five groups, including a 6 per cent rate of positive cultures for the psychiatric group. Throughout the study, a wide divergence prevailed between physically normal and sick subjects. Cumulative percentage of positive cultures rose to only 6 per cent for normal subjects, in contrast to a high of 35 per cent for the moderately ill and 73 per cent for the moribund. Overall percentage of positive cultures in each group remained essentially the same.

This study showed some correlation between the rise in gram-negative bacilli and exposure time in the hospital environment. Much more pronounced, however, was a correlation between the prevalence of pathogens and severity of illness. Nineteen per cent of moderately ill and 55 per cent of moribund patients had positive cultures within 96 hours of admission. Frequency of Serratia and Proteus genera of bacteria was much lower for the moderately ill than for the moribund. Serratia was isolated in one (1 per cent) of the moderately ill and 9 (26 per cent) of the moribund; Proteus, in none of the moderately ill, but in 8 (24 per cent) of the moribund.

BACILLI ON THE MOVE

Several studies reveal that bacteria in the upper respiratory tract frequently migrate into the lung.

Waldemar G. Johanson, M.D.; Alan K. Pierce, M.D.; and Jay P. Sanford, M.D. *The New England Journal of Medicine* (Vol. 281, No. 21), November 20, 1969.

Pneumococci instilled in the nose of nonanesthetized rabbits appeared in the lung within minutes. When tracheobronchial clearance is impaired in dogs after a bronchus has been occluded with a piece of sterile cotton, pharyngeal organisms can be readily recovered distal to the occlusion.

In human studies, bronchoscopic specimens taken from the bronchi of a normal person usually are sterile on culture, while specimens from a person with bronchopulmonary disease contain pharyngeal flora.

Furthermore, autopsies have established that bacterial flora in the pharynx may also be found in the lungs. Whereas this finding has been attributed to agonal aspiration of pharyngeal content, it can just as reasonably be attributed to terminal failure of the clearance mechanism.

Previous studies have revealed that gram-negative bacilli are not frequently found in the pharyngeal cultures from normal subjects. The present study has shown that to be the case while emphasizing that the prevalence of gram-negative bacilli among sick patients is strikingly increased.

Intense exposure of the respiratory tract to gram-negative bacilli may occur when contaminated aerosols are generated by inhalation therapy equipment. However, some studies show that even under these circumstances only a small percentage of persons exposed become colonized, and necrotizing pneumonia due to gram-negative bacilli is infrequent. Furthermore, massive exposure of normal subjects to these organisms does not result in colonization of the upper respiratory tract.

During the course of this study some aerosol medications were found to be contaminated with Serratia. Colonization did not occur in the 10 moderately ill patients who received these medications, but did occur in six of 18 moribund patients who received the same medication. Environmental contamination with other bacilli was not demonstrated and the observed prevalence of bacilli in pharyngeal cultures could not be explained on this basis.

Some studies suggest that antibiotics remove a major barrier to gram-negative colonization by suppressing the normal pharyngeal flora, which may suppress the growth of non-resident species. In this study, however, antibiotic therapy appeared to have no significant effect.

Of all the factors examined, appearance of gram-negative flora correlated most closely with clinical severity of illness. These findings suggest that the ability of sick patients to remove, or clear, exogenous bacteria from the pharynx is impaired. Susceptibility to gram-negative bacterial pneumonia may be increased by such colonization of the pharynx alone. More likely, it is enhanced by a concomitant impairment in pulmonary clearance mechanisms as well.



Physical Training and Pulmonary Diffusing Capacity

J. S. Hanson (Medical Center Hosp of Vermont, Burlington)

Dis Chest 56:488-493 (Dec) 1969

The effects of nine weeks of physical training on certain ventilatory variables and the pulmonary diffusing capacity for carbon monoxide were studied in ten university distance runners. A nonexercising control group of five medical students was also investigated. Daily calisthenics and long-distance running as well as frequent participation in competitive meets had no measurable effect on minute volume of ventilation, oxygen uptake, carbon dioxide elimination, or diffusing capacity. The lack of training effect of diffusing capacity measured at a single submaximal work load confirmed the results of other recent longitudinal studies. Brief review is made of previous investigations into the relationship of diffusing capacity, participation in athletics and physical training. Diffusing capacity is closely correlated with dimensional and functional factors of the oxygen transportation system, and training augmentation of these areas serves primarily to extend an athlete's maximal work and endurance capabilities. Training effects should be studied during maximal work loading.

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Health Problems of the Elderly in Rural Areas

Ben N. Saltzman, M.D.*

I am Dr. Ben N. Saltzman of Mountain Home, Arkansas, in the active practice of general medicine and immediate past chairman of the Council on Rural Health of the American Medical Association. I have been in practice in this community for more than 23 years and have watched it change from a very rural area to a retirement area. My patients at first were chiefly the elderly farm people who had remained behind while their children and grandchildren had moved away to more economically secure areas. Now my practice is primarily concerned with the health care of retired, elderly people who have moved in from the more cosmopolitan areas. Still, I am concerned with the health of a fairly good mixture of both the economically secure and the deprived rural elderly.

For many years as a member of the Council on Rural Health of the American Medical Association and for three years as its chairman, I have been confronted on a nation-wide basis with the problems of rural people of all ages. However, the problems of the elderly in most instances seemed to be more acute. A study of these problems revealed that their nature was primarily sociologic rather than pathologic. All segments of the rural aged population, whether affluent or deprived, suffer from one chief malady, namely loneliness. This loneliness whether caused by the loss of children or grandchildren or by self-removal from the family environment has affected most of the physical problems that have confronted me as a physician. This does not mean that the rural elderly do not have physiologic illnesses. They have the same illnesses that affect all ages. However, the infirmities that aging usually produces make these illnesses more difficult to manage. The individual whose eyesight has failed, whose hearing has deteriorated, and whose joints and muscles will not carry him in an ambulatory manner finds it difficult to marshal the forces necessary to recover from other illnesses such as those affecting the cardiovascular system and the respiratory system.

In my practice I see a considerable number of patients who have had cerebral vascular accidents (the "stroke" syndrome). These people are not necessarily bedfast but do have some difficulty in walking or moving quickly or speaking fluently. I see several others who have had one or more myocardial infarctions (heart attacks). I see many patients affected with various degrees of emphysema (shortness of breath). There are many complaints of digestive disturbance which include symptoms attributable to the gall bladder system, the gastric system, the colon and the favorite syndrome of constipation. However, I believe that the most frustrating complaint from the standpoint of the elderly patient is that he cannot find anyone to take care of his feet. These patients, because of poor vision, cannot see well enough to cut their toenails. They develop nail hooks, corns, calluses and plantar warts which give them no end of pain and discomfort and in many cases make life unbearable.

In this sketchy manner I have outlined some of the health problems of the rural elderly. Now, these problems are little different from those of the elderly urban population. There is one chief difference however. These people find it more difficult to obtain the necessary care for their ailments. The physicians are available to serve them. Health nurses are available to act as liaison between the patient and the physician, but it is becoming more and more difficult for the elderly patient to make his way to the physician's office or to the outpatient hospital clinic. Therein lies the rub. Most of my elderly patients complain that they cannot get the transportation to take them to the physician's office. I truly believe that 60% of my elderly patients would be happier if someone could bring them to my clinic. Some people complain that it costs them as much as $15.00 to $20.00 to be transported to

* Mountain Home, Arkansas.

the office by cab. They state that my office fee of $4.00 is just a drop in the bucket as far as their expenses are concerned.

Then I hear another cry repeated over and over again. Drug costs are too high. After I write my prescription the financial problems begin. I would say that in my own community more than 50% of the prescriptions written by physicians are sent away to larger cities to be filled by cut-rate drug stores. It is simply a matter of economics. Even the more affluent retired person finds that he cannot afford to support the local drug stores, though he realizes they have comparatively higher operating expenses than the larger distant concerns. I am certain in my own mind that the continual complaint of the high cost of medical care is chiefly related to the high cost of drugs.

So far this talk seems to deal more with economics; the economics of transportation and the economics of drug costs. There are other very important aspects of the health problems of the rural aged. I have earlier mentioned the loneliness that exists in the elderly, whether they are married, single or widowed. Another aspect of the problem is that these people find themselves with nothing to do. Many have taken the stand that retirement means complete removal from any occupational endeavor.

At the other end of the spectrum is the retired individual who will often undertake a type of work around the house to which he is not physically accustomed. Very often I am called upon to treat a heart attack brought on by lifting large loads of wood to be carried to the home fireplace. Rocks abound in rural areas and very few of my retirees are physically capable of moving boulders by themselves. They attempt to do this to create beautiful lawns. Then having completed these lawns these individuals proceed to mow them. Usually in temperatures not suited to either mad dogs or Englishmen.

We thus come to the problem of health education. Most of our elderly patients have had very little health education throughout their lifetimes. These people have been busy in their businesses, their jobs, their professions and have not been exposed to what I feel is real health education. They have gotten their information from television commercials and from newspaper quotations but have had very little formal training in what good health really is. These people have now found themselves with a great deal of leisure time. I feel that if this time could be programmed into health education as well as occupational usefulness many problems that confront us would be alleviated. I have noted with interest the new O.E.O. projects that provide some form of remunerative work for individuals of this type. I speak of the Green Thumb and Green Light projects. In our area there is an Ozarks Opportunities Project which teaches skills and markets products. I know of many successful results of these activities which have produced better health, both physical and mental. I am in complete sympathy with what is being attempted. I feel that more useful jobs should be found for the elderly, whether deprived or in better financial circumstances. I would like to see a continuation of these individuals in the occupations in which they have been trained. They are most happy doing the work to which they have become accustomed over the years and in which they feel that they can do a better job.

Forced retirement is almost as cruel in my mind as leaving the elderly citizen in the woods to die; as was the custom of our early Americans. We know that muscles fail with disuse. It is my firm conviction that brain cells also fail with disuse. Over the years I have enjoyed my practime which has been chiefly with the elderly population. These people, when they first come to me are mentally and physically alert and wonderful people to know. In many cases I have established lasting friendships. Frequently these friendships have lasted a great deal longer than I would have believed possible because of the age of the patients. I have found that my recommendation that they find something to do has paid off in many instances. I have channeled some individuals into civic activities, others into church work, others into work in nursing homes and with retarded children. Whenever these individuals have found something to do they have retained their physical and mental faculties. However, those who have given up any effort to keep up with the mainstream of life have deteriorated rapidly.

Rest homes have served as a means of keeping the body alive. However, they have not necessarily served in keeping the mind alive and so we learn that individuals confined to nursing homes and rest homes generally speaking deteriorate and die sooner. There are some nursing homes with active recreational and occupational programs that are far different. Those nursing

homes that have program activities that are not puerile have been quite successful in keeping their inhabitants alive for many years. I have learned from my fellow physicians that those elderly people who can go into apartment house complexes seem to live forever because these people maintain all the aspects of normal daily living. Their minds and their bodies stay alive and alert.

Now having covered these various problems that confront us in rural areas I would like to enumerate some of the things that I feel can be done. First, a program to assuage loneliness. These people who have nothing to do should be encouraged, and in fact made to go out and visit with others more physically incapacitated. We need people to help people, and the aged can really help themselves and others. I know that the programs that employ the elderly to work with handicapped children have been quite successful. Why not a similar program to help the infirm aged?

Next, I would like to see an extension of home health care. In my own community we have an excellent home health service carried on by our State Health Department. I feel that it can be expanded with the help of the physicians practicing over our state. I know that home health services need to be provided over the entire country. We haven't begun to make a dent in the possibilities that exist for home health care and this is particularly true in the rural areas. This will require dedicated people. But these people can be taken from the small communities in which they reside. They can often do a more professional job than the professionals. Some system of licensing of home health aides who are not of the college level is necessary. I know that any competent physician can train the aides to do the necessary work in the home.

I would like to see an expansion of recreational programs and work programs to make use of the elderly in all walks of life.

I would like to see a high priority given to transportation for the rural aged. Whether it be community, state or federally controlled is not important. Wheels have become important in our lives and when these people are forced to give up their driver's licenses their lives collapse.

I think that it is very important that something be done to bring down the cost of drugs. I don't want to incur the wrath of the pharmaceutical profession, but I do believe that drug costs can be lowered. The pharmaceutical industry is doing a marvelous job of policing itself in the manufacture of its products and in the ethics of the distribution of these products. But I feel that it can also serve our country better by bringing down the cost of drugs.

My mention of the care of the feet may bring a humorous response; but seriously it is a very important problem for our elderly citizens. Perhaps we can produce more podiatrists, or failing this, perhaps we can train health aides to do the simple tasks necessary to provide better foot care. Our physicians do not have the time to cut toenails, remove calluses and corns. And yet, we find ourselves doing this very thing. There must be a better solution.

Finally, I want to make a plea for better health education. This can be accomplished through the use of our news media which include newspapers, periodicals, magazines, radio and television. Television has become a most important influence in our lives, particularly as it affects the elderly. Some way must be devised to program good health information to these people. In our area, the CASA Mobile Health Screening Project, sponsored jointly by the O.E.O. and the Farmer's Union has served to make elderly rural people aware of their health problems and has caused many to seek the help of their physicians. This, too, is a worthwhile educational tool. However, I think that it would be more effective if the active cooperation of county medical societies and individual physicians was intensively sought.

It is my feeling that comprehensive planning for health should include planning for the health of the rural aged population. This can be done on the local level and should involve these consumers in the planning. A. B. Alcott once said, "While one finds company in himself and his pursuits, he cannot feel old, no matter what his years may be." Most of our elderly citizens have retained their intelligence. Let's give them an opportunity to continue to use it.

Renal Cell Carcinoma Metastatic to Larynx, Case Report

E. J. Palacios, M.D.,* Carl C. Hanchey, M.D.,** and Harold J. White, M. D.***

Renal cell carcinoma is the most frequently seen malignant tumor of the kidney. The rich plexus of lymphatics accompanying the interlobular, arcuate, and interlobar vessels of the kidneys transport tumor emboli to the extrarenal lymphatics. The frequent direct extension of renal adenocarcinoma into the renal vein offers this tumor an access to the blood stream which is unique among carcinomas. The most frequent sites of metastasis in a series of 320 cases[1] were as follows: lungs, 55.9%; lymph nodes, 38.1%; liver, 35%; bones, 33.1%; adrenals, 18.8%; kidney, 7.5%; brain, 6.6%; spleen, 5.3%; heart, 4.7%; the remaining being found in the skin, thyroid, intestine, muscle, spinal cord, testicles and cord, pancreas, ovary and penis, in this order of frequency.

Previous to this report, just three cases authenticated by postmortem examination or surgical exploration of renal cell carcinoma metastatic to the larynx have been found in the world medical literature.[2,3,4] The first was reported by Turner[5] in 1924. This tumor has the ability to metastasize at a distance. Occasionally unique metastatic sites are seen as the case Anderson, et al.,[6] reported recently of renal adenocarcinoma metastatic to the right great toe.

Case Report

This 72-year-old white male was in good health until four weeks prior to his admission to the Little Rock Division of the Veterans Administration Hospital when he developed hoarseness. Laryngoscopic examination revealed the presence of a dark red polypoid tumor arising from the left lateral wall of the larynx just above the ventricle. The tumor bled freely when biopsied. A few days later, it was excised. Our diagnostic thoughts were divided among hemangioma, granular cell myoblastoma, metastatic renal cell carcinoma and non-chromaffin paraganglioma. Under this suspicion an intravenous pyelogram was obtained which demonstrated a tumor mass in the upper pole of the right kidney (Fig. 1).



Figure 1.

Intravenous pyelogram. There is extensive distortion of the right calyceal structures. The mass occupying the mid portion of the kidney is easily seen. The left kidney is within normal limits.

The patient did not have history of weight loss nor pain, nor were hematuria and polycythemia found. There was no hyperpyrexia. No other metastatic foci could be detected by radiological survey of the bones nor by chest X-ray. In view of these negative findings a right nephrectomy was carried out. At operation, a large tumor was found in the upper pole of the kidney (Fig. 2).

The tumor was adherent to the inferior vena cava and it was felt that residual tumor was left attached to the vein.

Microscopic Diagnosis and Evaluation

Sections taken from the renal tumor (Fig. 3) shows it to be composed of large clear cells, with prominent rounded, markedly basophilic nuclei, well defined cytoplasmic borders arranged in a

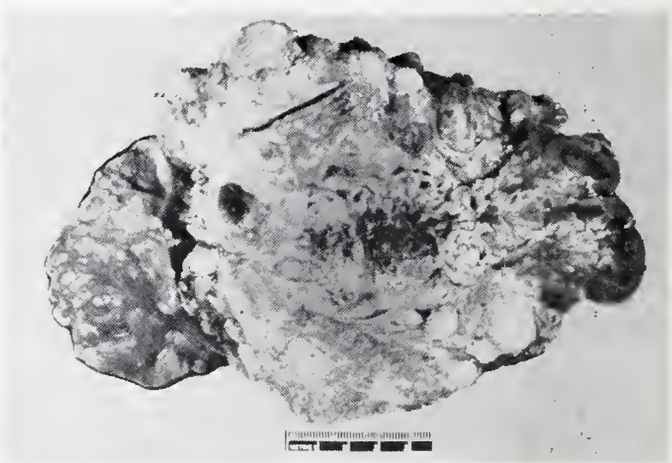


Figure 2.

Tumor is in right kidney. Note massive involvement of entire mid upper portion. Tumor extends beyond the capsule.

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papillary structure with a very thin delicate supporting stroma. The laryngeal tumor (Fig. 4)

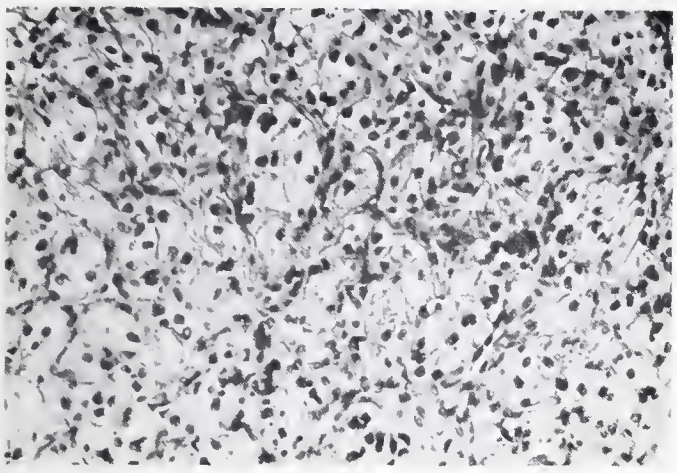


Figure 3.

Typical clear-cell adenocarcinoma of kidney. Pleomorphism is moderate.

looks essentially the same but shows a few different features as one frequently observes in secondary tumors when compared with the primary neoplasm. The supporting stroma of the metastatic tumor is thicker in some areas and the tumor shows far more vascularity. A few of

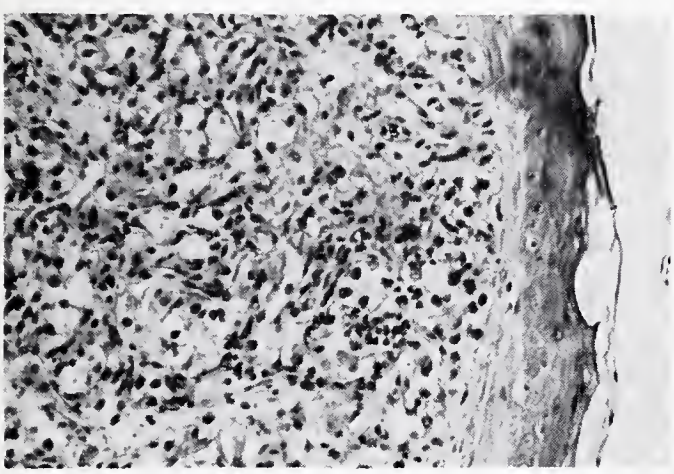


Figure 4.

Metastatic clear-cell adenocarcinoma in larynx. Tumor extends to mucosal lining. Increased vascularity is apparent.

the cells contain a denser, slightly granular and more eosinophilic cytoplasm. This feature plus the pronounced vascularity of the tumor increased the problems of diagnosis. This is particularly the case when the material examined comes from a superficial biopsy.

As indicated above in the differential diagnosis we also considered a granular cell myoblastoma, non-chromaffin paraganglioma and hemangioma. The commonest sites of production of granular cell myoblastoma are the tongue, skin, breast and subcutaneous tissue, but it may be seen in the larynx. This tumor is composed of clumps and interlacing strands of large round cells with typical acidophilic granular cytoplasm. The epithelium above often shows pseudoepitheliomatous hyperplasia and sometimes hyperkeratosis and parakeratosis.

The non-chromaffin paragangliomas as well as the hemangiomas and renal cell carcinoma are richly vascular. The former shows the walls of the blood vessels limited to an endothelial lining supported by a fine reticulin membrane and "epithelioid" cells in direct proximity to the vascular meshwork lying in ribbons and nests with characteristic polygonal or rounded shapes, abundant clear acidophilic cytoplasm, inconsistent eosinophilic granules and nuclei generally vesiculated. On the other hand, a hemangioma is composed of clusters of thin-walled, blood-filled channels separated by variable amount of fibrous connective tissue depending on the age of the tumor.

Conclusions

Metastatic tumors to the laryux are very rarely seen. Only three cases of metastatic renal cell carcinoma have been found in the world medical literature up to August of 1968. Clinical diagnosis of this entity is almost impossible and the pathological examination of the specimen could be a difficult task, especially when the biopsy is not deep enough. Forty-five per cent of patients having renal cell carcinoma are asymptomatic and symptoms determined by the metastatic focus can very well be the first manifestation of disease.

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Phototherapy for Hyperbilirubinemia of Prematurity

Wade W. Burnside, Jr., M.D.*

For many years there has been general agreement among pediatricians regarding the danger to newborn infants of high bilirubin levels developing from hemolytic disease. I am referring here to hemolysis caused by Rh incompatibility or ABO incompatibility—the classical name for which is erythroblastosis fetalis. It is generally conceded that these high levels of bilirubin can cause permanent brain damage—kernicterus. There is also broad agreement that 20 mgm% is the critical level. This does not mean that all babies with a bilirubin of over 20 mgm% will have brain damage, but rather, that below 20 mgm% brain damage is highly unlikely and above 20 mgm% the incidence increases rapidly with rising levels of bilirubin.

Among premature infants there is a high incidence of jaundice which is *not* related to hemolytic disease. There is wide variation in the reported incidence but probably about 30% of premature infants develop a bilirubin of greater than 15 mgm%.[1] As in the case of hemolytic disease this is predominantly indirect reacting bilirubin. For many years there was much disagreement in pediatric circles regarding the danger of these bilirubin elevations. There was no agreement on whether or not this was harmful at all, and certainly no agreement on a critical level. The name generally applied to this condition was "physiologic jaundice," because it is common, is self-limited, and most cases do not require treatment. In 1965 a group at Michael Reese Hospital in Chicago[2] reported that if they used a critical bilirubin level of 20 mgm% they would have to do exchange transfusions on 20% of their premature infants. If, however, they used 24 mgm% as the critical level the incidence of exchange transfusion was reduced to 4%. In a series of 187 patients they reported only one with kernicterus and his maximum bilirubin level was above 24 mgm%. On the other hand, Stern and Denton at McGill in Montreal[3]—also writing in 1965—reported six cases of kernicterus in premature infants without hemolytic disease with a maximum bilirubin of 23.1 mgm% in four of whom the level was never higher than 19 mgm%. They point out that four of the six did not develop the classical signs of kernicterus such as shrill cry, retraction of the head and spasticity but all six had classical pathologic findings at autopsy. All six of these infants had suffered from antecedent respiratory disease. The authors postulate that the reduced pH associated with respiratory distress caused these babies to be more susceptible to kernicterus. They propose earlier exchange transfusion for jaundiced premature infants with a history of respiratory difficulty or asphyxia. The Michael Reese group[2] also mentioned that sick premature infants "may be particularly susceptible to kernicterus at high levels of bilirubin." Also Boggs, Hardy and Frazier at Philadelphia[4] reported in 1967 a study of the developmental status of eight-month-old babies who had had elevated bilirubin levels. It was a collaborative study including 23,000 infants. They found a positive correlation between increased bilirubin levels and the incidence of low motor or mental scores at eight months of age. This correlation becomes substantial at 16-19 mgm% and more marked at higher bilirubin levels.

In a review article by Lucey at the University of Vermont[1] in 1960 it was suggested that the designation "physiologic jaundice" was inappropriate for a condition which can cause brain damage and death. He suggested the name "hyperbilirubinemia of prematurity" for those infants with a bilirubin level of over 10-15 mgm% occurring in the first week of life.

When I have such a baby I tell the parents that the condition is due to "immature liver function." This is an accurate, though certainly over-simplified, explanation. As bilirubin is formed through the breakdown of hemoglobin it is transported in the plasma attached to protein—mainly albumin. At this point it is indirect reacting bilirubin. In this form it is not excreted and in this form it is damaging. In the liver it is converted to direct reacting bilirubin through the action of the enzyme glucuronyl transferase. This produces a water soluble bilirubin glucuronide which is excreted and is not brain damaging. It is estimated that in many jaundiced infants the relative capacity of the liver to effect this transformation of indirect to direct bilirubin is 1 to 2% of that in adults. It is theorized that the enzyme is present but in an inactive state.

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The reasons for this low activity in fetal and neonatal liver are not known.[1] The result, however, is a gradual build-up of the potentially damaging and non-excretable indirect reacting bilirubin. I say "potentially damaging" because numerous factors determine whether or not a particular bilirubin level causes brain damage. One of the most important of these is the number of binding sites on albumin molecules. As mentioned previously bilirubin is transported attached to albumin. However, it is *free* bilirubin which is damaging and if the patient has a relatively low level of albumin the binding sites are more quickly exhausted and free bilirubin begins to build up. Also, other substances can take up binding sites—displacing the bilirubin. This is the reason for not giving sulfonamides to newborn infants—sulfonamides take up albumin binding sites and this can result in the patient developing kernicterus at a relatively low level of serum bilirubin. I mentioned previously that infants with respiratory distress are more prone to kernicterus. These babies have low pH and it is felt that acidosis causes a dissociation of bilirubin and albumin. Giving large doses of vitamin K also results in hyperbilirubinemia and kernicterus. The exact mechanism is not known but it is thought that this causes an increase in hemolysis and also interferes with bilirubin conjugation.[1]

Treatment

Stern and Denton[3] writing in 1965 mention only exchange transfusion as a treatment for hyperbilirubinemia. This was also true of the 1965 article from the group at Michael Reese.[2] Lucey's[1] review article in 1960 states, "At present the only well substantiated, effective means of treatment is exchange transfusion." He points out the wide divergence of opinion in regard to the critical level of bilirubin. He found in his review that in various hospitals the level varied from 15 to 30 mgm%. Eight years later (1968), however, this same author published an article in *Pediatrics* titled "Prevention of Hyperbilirubinemia of Prematurity by Phototherapy."[5] But the earliest article which I have found reference to in the English language literature was a report by Cremer and Perryman[6] in 1958 which appeared in *Lancet*. They noticed that in the laboratory bilirubin was highly photosensitive. They found that specimens left in bright daylight may lose as much as 30% of their bilirubin in an hour. Also the nurse in charge of the premature unit had reported the apparent fading of the yellow pigmentation in the skin of jaundiced babies when they had been in sunlight for a short time. The first clinical experiment reported by Cremer and Perryman involved exposing infants to direct sunlight for periods of 15-20 minutes with alternate similar periods out of the sun. When this was found to be effective they designed an apparatus containing eight 40-watt fluorescent bulbs to provide a source of light. This was also effective. In a later issue of *Lancet* that same year Franklin at Queen Charlotte's Hospital in London,[7] commenting on the Cremer and Perryman article, reported similar results. After that there is a void in the literature until 1965 when Broughton and his group in London[8] reported in *Archives of Diseases of Children* their investigation of the effect of light on elevated bilirubin levels. They included in their study only infants with a bilirubin of at least 12 mgm% and had eleven infants in the control group and eleven in the treatment group. Bilirubin level was checked every 12 hours. The treated babies were exposed to light for approximately eight hours in each 12 hour period. The mean bilirubin at the beginning of treatment was 13.4 in the control group and 13.5 in the treated group. After 36 hours the mean bilirubin levels were 14.8 and 11.3, respectively.

Previously, I mentioned a second article by Lucey at the University of Vermont.[5] In 1968 his group reported their investigation of the effect of light on hyperbilirubinemia. They included all premature infants and had a series of 111—53 treated and 58 control. The treated group were exposed to light continuously until six days of age except for feeding and obtaining blood samples. Ten 20-watt bulbs were used in their light cradle. The babies had no clothing and were turned several times a day. Their eyes were kept covered. Bilirubin was checked on the first, second, fourth and sixth days of life. In the control group the mean bilirubin reached a peak level of 11.7 mgm% on the fourth day then dropped to 8.2 mgm% on the sixth day. In the treated group the maximum bilirubin level was 5.6 mgm%, also occurring on the fourth day.

The exact nature of the products of photodecomposition are not known but both human and animal experiments have proved them to be non-toxic. These decomposition products are excreted rapidly in the bile and urine and do

not require conjugation with glucuronide for excretion. Also, these products do not take up binding sites on albumin molecules. Over 1,000 infants have been reported in the literature to have received phototherapy for high serum bilirubin and no ill effects have been observed by any of the authors.[5]

It should be emphasized that this treatment is recommended only for the hyperbilirubinemia of prematurity and should not be relied upon in cases of hemolytic disease. Phototherapy can be used in hemolytic disease, however, as long as the bilirubin level is closely watched and its use does not create a false sense of security. Possibly in a few mild cases of hemolytic disease exchange transfusion could be avoided or at times, perhaps, it might eliminate the necessity of a repeat exchange transfusion.

My conclusion is that the prevention and treatment of hyperbilirubinemia by phototherapy is simple, inexpensive, safe and effective.

Addendum

In the October, 1969, *Journal of Pediatrics,* Behrman and Hsia[9] report on a symposium which was held in Chicago in June, 1969, dealing with the question of phototherapy for hyperbilirubinemia. They question whether the safety of phototherapy has been proved. The following conclusions were reached:

1. "It was agreed by all of the participants that phototherapy is not indicated for routine use in all term infants to prevent hyperbilirubinemia."
2. "The consensus of the meeting, with a few exceptions, was that phototherapy should not be employed routinely in the premature nursery in an attempt to prevent elevations in the serum concentrations of bilirubin in all infants."
3. "Almost all of the participants in the conference agreed that there were certain clinical situations in which they would use phototherapy to treat a jaundiced premature infant and, much more rarely, a term infant. In such situations the clinician must make the judgment that the risks of phototherapy to a particular patient are less than the risks of the jaundice or of treating the jaundice by some other method."

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Sarcoidosis in Washington, DC

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One hundred and five black patients who had biopsy specimens which confirmed sarcoidosis were studied clinically. Of these, 16% were asymptomatic while the remainder had a variety of characteristic respiratory, constitutional, and other manifestations. Twenty-nine patients were in the roentgenographic category of hilar lymphadenopathy bilaterally, with or without parenchymal lung filtration. Seventy-eight patients were anergic to skin-test antigens. Of 33 patients who were Kveim tested, only seven had abnormal biopsy specimens. Patient selection for treatment was based on disease severity. Of the original 105 patients, 64 were observed for five years. The majority improved, but five died. Prognosis was related to roentgenographic categorization and clinical manifestations.

Electronystagmography—A Diagnostic Aid in Dizziness

H. A. Ted Bailey, Jr., M.D.*

Every physician regardless of the nature of his practice is called upon to treat patients complaining of dizziness. Because dizziness arises from a multitude of causes that are frequently benign in nature, the physician may not give the complaint serious consideration. To the patient, however, this is a frightening sensation and he wants the physician to give his complaint careful attention. If the patient feels his symptom is being taken lightly, he will often go from one doctor to another in an effort to learn the cause and to get relief from his complaint. At the very least, he wants assurance after a thorough examination, that nothing serious is causing his problem.

Inasmuch as many of the causes of dizziness arise in the inner ear or its central nervous (vestibular) pathways, the Otologist is frequently consulted to see the dizzy patient. It is the responsibility of the Otologist to determine, if possible, whether a disturbance in the vestibular system is the cause of the patient's dizziness. A detailed history and thorough examination are essential in arriving at a correct diagnosis, but many times special studies are required.

In order to be sure that each patient receives a complete work up, a routine has been established for the neuro otological examination. This includes a review of a detailed history; a thorough clinical examination of the ears, nose and sinuses, mouth, naso oro, and hypo pharynx, larynx, and neck; a selected battery of audiometric tests; cerebellar and cranial nerve function tests; a vestibular examination including tests for spontaneous nystagmus, the bithermal caloric test as described by Fitzgerald and Hallpike, and the Hallpike positional tests; and when indicated radiography, spinal fluid study and angiography.

The most important evidence of vestibular disease is the presence of vestibular nystagmus (rhythmic eye movements with a slow and fast component). [The word nystagmus is from the Greek word "nystagmos," which means to nod or to sleep.] Recognition of nystagmus has always been difficult by direct visual observation. While Frenzel's glasses (plus 20 diopter lenses) help reduce visual fixation, they do not completely eliminate it. In 1956 Aschan, et al.[1] reported a large series of patients that they had studied utilizing a combination of the technique of oculography, plus the bithermal caloric technique for vestibular stimulation. This enabled them to electrically record the nystagmus produced by the caloric test with the patient's eyes closed in a darkened room. With this method visual fixation could be eliminated and thereby allowed nystagmus to be easily recorded and identified. Application of oculography for recording nystagmus was named Electronystagmography (ENG). Since the work of Aschan, a number of papers[2,3,4,5,6] have appeared describing interpretation and technique of Electronystagmography.

Electrical recording of nystagmus is possible because the retina of the eye generates an electric potential, which is commonly known as the corneoretinal potential. The front of the eye is positive in relation to the back of the eye. This causes the eye to act like a dipole or small battery. Using an electrode at the outer canthus of each eye and a ground electrode placed on the forehead, all movements of the eyes in the plane of the electrodes cause a voltage change which is conducted by the skin and picked up by the electrodes. These charges are sent into an amplifier and on to a penwriting recorder which graphically traces each movement of the eyes on a moving roll of paper. The resulting graph is called a nystagmogram.

Since the establishment of ENG as a clinical tool by Aschan, advance in technology and instrumentation have recently resulted in a reasonably priced and sized recorder that is practical for office use. These are available from several different manufacturers. Our own equipment is a Beckman 2 channel type RS Dyngraph Recorder, and has proven to be essentially service free. Because of the difficulty in the past of evaluating the vestibular system we eagerly added Electronystagmography as a diagnostic aid. ENG as a part of the routine neuro-otological examination has now been used for the past two years in our office and a number of advantages seem apparent over the old method of simply observing nystagmus by direct visualization.

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1. The most important is the ability to test for nystagmus with the eyelids closed. As stated before eyelid closure eliminates suppression of the nystagmus caused by visual fixation. This makes possible discovery of many cases of spontaneous and positional nystagmus which would otherwise go unnoticed.
2. It allows for much better interpretation of the nystagmus produced by vestibular stimulation during the bithermal caloric test and also during testing for optokinetic nystagmus.
3. It furnishes a permanent record of the nystagmus to which one can refer in following the course of the illness and also in determining the patient's response to medication.
4. It makes possible the fine measurements of the nystagmus specifically, frequency and speed of the slow phase of the nystagmus, the latter being the best indication of the intensity of the nystagmus.
5. It has stimulated our interest in working up the dizzy patient by providing a better means of vestibular evaluation.

The Electronystagmographic examination in our clinic requires approximately one hour to complete and is performed by a trained vestibular technician. This frees the physician from a time consuming procedure while assuring him of dependable test results. The ENG examination in our clinic consists of the following test:

1. Calibration of the eye movements.
2. Test for Gaze nystagmus.
3. Optokinetic nystagmus tests.
4. Head position test (for spontaneous or positional nystagmus).
5. Hallpike tests (for positional vertigo and nystagmus).
6. Bithermal caloric test (Fitzgerald-Hallpike technique).

Calibration is performed so that a certain amount of recorder pen deflection can be translated into a certain degree of eye movement. Calibration is accomplished by having the patient looking back and forth between alternately blinking lights subtending an angle of 20° with the bridge of the patient's nose.

Gaze nystagmus is a nystagmus produced when the eye look away from the center. A gaze nystagmus almost always beats in the direction of the gaze and is performed with the eyes opened. Inasmuch as extreme lateral gaze produces gaze nystagmus in about 50% of normals, it is important when testing that the eye deviation be quanitatively controlled. A deviation of 20° from the midline has been found to be most useful for testing for the presence of gaze nystagmus. When present, it suggests a central nervous system lesion except when the gaze nystagmus is unilateral and is found in the presence of an intense spontaneous nystagmus noted with eyes closed.

Optokinetic nystagmus is produced by passing before the patient's eyes a repetitious series of visual stimuli. We do this by rotating a white drum with black vertical stripes ½ inch wide at a distance of 18 inches from the eyes. This produces a nystagmus in the opposite direction to the rotation. Recordings are made with a hand rotated drum turned slowly (approximately 5 r.p.m.) and rapidly (25 r.p.m.) in one direction and then in the opposite direction. The symmetry of the responses produced by the opposite turning of the drum is evaluated. An asymmetrical response may indicate central nervous system disease unless associated with an intense spontaneous nystagmus.

Position testing is designed to test the effect of head position in producing nystagmus or its effect on a spontaneous nystagmus. These tests are run prior to caloric stimulation to eliminate the possibility of picking up only a provoked nystagmus brought about by the repeated caloric tests. Presence of positional nystagmus is evidence of some vestibular disturbance but is not localizing.

The Hallpike test is also a head position test but includes rapid motion of the head as well. This test is used to elicit the presence of positional vertigo and nystagmus. It consists of rapidly moving the head from a sitting position to a head hanging supine position within a three second period. The head is maintained in this position for 60 seconds and then the patient is returned to a sitting position. After a slight interval the procedure is repeated in like manner in the head hanging right lateral position and in the head hanging left lateral position. A classical Hallpike response is the appearance after a few seconds of a rotary or horizontal nystagmus which may be to either side, usually lasting only a few seconds and accompanied by acute vertigo, and fatigable on repeated elicitation. An atypical response is one that does not

meet all the requirements for the classical response. The classical Hallpike indicates the lesion is in the utricle in the inner ear, whereas the atypical response is not localizing.

The bithermal caloric test of Fitzgerald and Hallpike first reported[7] in 1942 has since become generally accepted as the standard caloric test. The patient may be tested in a sitting or supine position. We use the sitting position with the head back 60° which places the horizontal canal in a perpendicular position and allows it to receive maximal stimulation by the caloric tests. Our routine is to first test the left ear with cold (30° C.) water allowing 250 cc. of this water to flow into the ear canal over a 40 second period. Responses are recorded for 4 minutes from the start of the irrigation. A 5 minute rest period is then observed. Next, the right ear is tested in like manner with the cold (30° C.) water. Responses are again recorded for 4 minutes, then another 5 minute rest period follows. The left ear is next stimulated with warm (44° C.) water using 250 cc. for a 40 second period. Record of response for 4 minutes follows and then a rest period of 5 minutes. The right ear is then tested and recorded in like manner using the warm (44° C.) water. Calibration is repeated and this ends the ENG test.

Interpretation of the responses to the caloric test is mainly of value when comparing those results from one ear to those of the other. Two comparisons are useful. (A) A comparison of the responses from the left ear to those of the right ear. (B) A comparison of the responses producing a right beating nystagmus to the responses producing a left beating nystagmus. These comparisons allow the following conclusions.

1. The responses are equal and bilaterally symmetrical (normal).
2. A unilateral weakness exists (the responses of one ear are reduced by 20% or more in comparison to the other ear).
3. A directional preponderance exists (nystagmus in one direction is greater by 20% or more than the nystagmus in the opposite direction).
4. A bilateral weakness exists (the total eye speed from the 4 responses total less than 25° per second).
5. Absent response from one or both sides.

A unilateral weakness indicates a peripheral (inner ear and 8th nerve) lesion while a directional preponderance unless associated with unilateral weakness suggest central pathology. Bilateral weakness usually indicates a peripheral lesion but may be the result of drug toxicity. An absent response suggests peripheral pathology and is frequently seen with acoustic neuroma.

Electronystagmography is not in itself diagnostic, nevertheless it may suggest (1) whether pathology is present or absent in the vestibular system, (2) whether pathology is peripheral and if so on which side, (3) if pathology is central whether it is in the posterior fossa or cerebral hemispheres and on which side. When the information from the Electronystagmography is combined with the results of a detail clinical history, a carefully performed ear, nose, and throat examination, an analysis of a battery of audiometric tests, and an evaluation of cerebellar and cranial nerve function tests, the presence or absence of vestibular disease can usually be established. Determining the specific etiology producing the individual patient's complaint of dizziness allows better management and control of the condition. The information derived from the Electronystagmographic examination will increase with its continued clinical application. It is my feeling that Electronystagmographic examination provides enough information now that it should be made part of the comprehensive neurootological examination of the patient complaining with dizziness.

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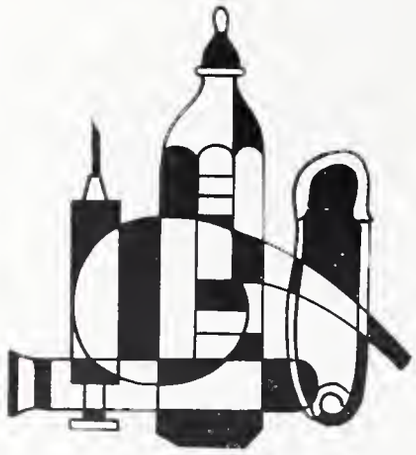
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DEPARTMENT OF
PEDIATRICS
UNIVERSITY OF ARKANSAS
SCHOOL OF MEDICINE

Grand Rounds

Idiopathic Thrombocytopenia Pupura: Harris

Discussor — Dora Jones, M. D.*
Participant — Jon D. Hall, M.D.**
Editorial Director — Jerry G. Jones, M. D.***

Case Presentation

Present Illness

This 7-year-old Caucasian female was well until one year ago when she began bruising easily. She remained active, but two weeks prior to admission she had numerous bruises, and three days prior to admission she had petechiae. She had received the following medicines: Furandantin—8/12/69 for urinary tract infection, Sulfa Dyne—9/8/69 for urinary tract infection and Ampicillin—10/21/69 for upper respiratory tract infection. There was no history of epistaxis or bleeding from other mucous membrances. Family history of bleeding tendencies was denied.

Physical Examination

This was a well developed and well nourished female in no apparent distress. Numerous bruises and petechiae were scattered over the body. The nasal mucosa was pale with small blood clots. Petechiae were observed on the buccal mucosa. No other abnormalities were noted.

Laboratory Data

Hospital	Hgb (gm%)	Hmt (5)	WBC (10^3)	Plat (10^3)	Differential
10-6	12	37.5	8.3	decreased	0-0-0-0-0-51-48-1
10-7	14.2	41.5	10.7	6.0	1-3-0-0-0-65-28-3
10-10	13.6	41	10.5	20.0	0-0-0 0-0-88-12-0
Clinic 10-20			19.1	20.0	
10-27				2.0	
11-3				27.0	
11-17	15.4	45.5	17.5	26.0	0-0-0-0-0-80-19-1
11-24	14.6	44.5	17.7	9.0	0-0-0-1-1-80-17-1
12-1	15.2	47	11.9	3.0	0-0-0-0-0-82- 8-4

Bone Marrow: Megakaryocytes increased; no abnormal granulocytes, lymphocytes, or erythyroid series.

Indirect Basophil Degranulation Test: Positive to penicillin 10/10/69.

BUN: 10 mg%, urinalysis within normal limits; urine culture—no growth.

X-rays: Chest and IVP within normal limits, voiding cystourethrogram—area of stricture in distal urethra.

Hospital Course: This child was begun on 15 mg prednisone q.i.d. on 10/6/69 and has had a decrease in bruising. She has been followed in our hematology clinic since discharge and the steroids have been tapered. Currently she is on 5 mg. prednisone q.i.d. and a low salt diet. She has daily epistaxis of minimal amount. She has been referred to the Urology Clinic for her urethral stricture.

Discussion

Dr. Dora Jones: This morning we are going to talk about ITP and the causes of low platelets in general. Before we discuss this case, I want to make just a few general remarks about the evaluation and causes of this disease.

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ITP by definition means idiopathic; hence, the other causes of thrombocytopenia are first ruled out. These other causes primarily are aplastic anemias, leukemia, hypersplenism, and severe infections. Sometime, however, a mild viral infection is associated with a lowered platelet count. Even live measles vaccine can cause a decreased platelet count.

When a patient presents with petechiae, a peripheral smear should be obtained to determine whether platelets are present in adequate numbers. A platelet count should be performed also. Thus one confirms that the patient has decreased numbers of platelets, ruling out the other large group of disorders, the nonthrombocytopenia purpuras (for example Henoch-Schonlein purpuras). With the knowledge that the patient has thrombocytopenia, one must do a bone marrow aspiration to rule out aplastic anemia, leukemia, or infiltrative processes such as Gaucher or Niemann Pick disease. Having ruled out these disorders, one is left with idiopathic thrombocytopenia purpura.

In pediatrics, the common clinical picture usually occurs in children between the ages of 2 and 6 years. The incidence is equal in boys and girls. It is rare in the Negro; the reason is unknown, but perhaps it is just that the petechiae are harder to see on dark skin. About 75% of children with ITP will have a history of an infection occurring about 3 weeks prior to the onset of the purpura and petechiae. Most commonly the infection is viral. Many times it is a disease like chicken pox, measles, cat scratch disease, infectious mononucleosis, or just a mild URI or gastroenteritis.

Children with ITP can bleed anywhere. Petechiae and purpura most commonly involve areas that happen to get hit the easiest in children, such as the anterior tibia, but they can be on the neck, chest, or anywhere. Only a few petechiae may be present and easily missed on the initial examination. About 5% of these children will present with hematuria. Occasionally we admit a child for workup of hematuria and a few days later discover petechiae of ITP. In one-third, the common presenting problem is epistaxis.

The *laboratory findings* confirm the diagnosis. Platelets are decreased on peripheral smear. The white count usually is normal or slightly elevated, and atypical lymphocytes may be present on the peripheral smear. Bone marrow smears show no other disease, and leukocyte maturation is normal. Megakaryocytes are present. They are often described in the literature as immature in character, and they have decreased shedding of platelets. Characteristically, megakaryocytes are increased in number, although occasionally they are slightly decreased. Thus, the bone marrow in ITP is not diagnostic, but it rules out other diseases such as leukemia.

The *clinical picture* is relatively characteristic. Most of these children are well one day and the next day suddenly present with showers of petechiae or ecchymoses. Usually the child feels well. On physical examination, generally the only finding is evidence of hemorrhages. These can be in the fundi, suggesting a graver prognosis. The spleen may be slightly palpable, but if a patient has marked splenomegaly one should think of another disease.

Ninety percent of children with acute ITP will have an uneventful recovery no matter what we do for them, and they will not have a recurrence. The platelet count becomes normal within a few days to 6 months with an average of around 2 to 3 months. Of the remaining 10% of children, 1 to 3% (depending on the series read) of them expire; the manner of death is almost always intracranial hemorrhage.

The remainder of children will have *chronic ITP,* which we define as a disease lasting longer than one year. There is no way of telling at the beginning who is going to have acute and who is going to have chronic disease, since it is only the time length that makes the differentiation between acute and chronic. However, children that develop chronic disease commonly have an infectious disease prior to presenting with ITP, and in the chronic group are more females than males. These are the only two differing features, and they are not helpful clinically.

Roughly two-thirds of children with chronic ITP will be cured if their spleens are removed. Thus, splenectomy is well worthwhile in cases of chronic ITP. It should not be done in acute cases (with rare exceptions).

An interesting feature of ITP is that the prolonged bleeding time corrects before the platelet count returns to normal. Obviously, the patient with a low platelet count is going to have a prolonged bleeding time. The reason the bleeding time returns to normal before the platelet count is unknown. Because of this phenomenon, it is worthwhile to follow the patient with bleeding

time determinations. In fact, some people base their decision to give steroids on this test.

Children with ITP do not necessarily need to be admitted to the hospital. One can always do the bone marrow aspiration on an out-patient basis to make the diagnosis. However, activity at home should be restricted.

The decision of whether or not to give *steroids* has to be made. The children that die, the ones that have intracranial hemorrhage, have it in the first week or within the first month of their illness. Thereafter, mortality is negligible. For this reason, if one is going to use steroids, the time to use them is early. However, the indications for steroids remain controversial. In some cases the platelet count may rise when they are given. In addition, steroids are thought to decrease the permeability of the blood vessel wall. If steroids can actually prevent intracranial hemorrhage, then this would be a good reason for giving them.

Many people believe ITP to be an *autoimmune disease* in that women with ITP often have babies with the disease. Antibodies, much more often seen in adults than in children with ITP, cross the placenta, producing a temporary thrombocytopenia in the baby at birth. The fact that ITP often occurs after an infectious disease also suggests that it is an autoimmune process. An occasional associated hemolytic anemia with a positive Coombs test implies an autoimmune etiology, too. The sera of patients with ITP have been found to contain a platelet depressing factor. Their plasma will produce ITP when given to a normal person.

Platelets apparently sensitized by antibodies are sequestered in the liver and spleen. Steroids and splenectomy do not prolong the shortened platelet life span directly, but rather they affect the sequestration of platelets.

Review of Case

The patient described in the protocol presented with a history of easy bruising, a common complaint in pediatrics. If the physician finds an excessive number of bruises, he should obtain a platelet count or at least a peripheral smear. There was no family history of bleeding tendencies. Rarely, families have thrombocytopenia, and if the mother and other siblings have a history of bleeding, a platelet count should be done.

Physical examination revealed numerous bruises. Her fundi were thought to be normal. The rest of the physical examination was essentially negative. Her platelets were decreased on the peripheral smear. A bone marrow was nondiagnostic. She had a history of numerous urinary infections, and was evaluated for abnormality of the urinary tract. I would not have performed a cystourethrogram on a patient with low platelets. However, she tolerated the procedure without bleeding.

This child had been on Furadantin, a sulfonamide, and ampicillin. All medications were discontinued when she was admitted, and the thrombocytopenia persisted. After a patient has been off all medications for two weeks, the medication is unlikely to be the cause of persisting thrombocytopenia.

She was placed on prednisone in a dose of one mg/lb/day. With this therapy she was followed in our clinic. Her platelet count promptly increased, but this often happens without therapy. Subsequently, her platelet count fluctuated with the dose of steroids. Two months after steroids were started, her platelet count was only 3,000/mm.^{3} This does not mean that her prognosis is bad, since the average is about 3 months before the platelets come back normal. The only factor causing concern is that she has continued to have mild epistaxis. Usually the bleeding episodes stop in spite of the platelet count remaining at 3,000.

Additional tests that we could have done were LE preps. Many cases of lupus erythematosus present initially with thrombocytopenia alone, many years or months later developing the complete clinical picture of LE. The LE prep should be done before the child is placed on steroids, because steroids can make an LE prep negative. We also might have obtained a direct Coombs, since a few patients develop a hemolytic anemia along with the thrombocytopenia. A heterophil test is also worthwhile, since the child with infectious mononucleosis may have no symptoms or very minor ones with regard to his "Mono," but low platelets may be associated and his chief symptoms or signs be due to hemorrhage.

We have already mentioned drug purpura, which we considered in this child. Some drug purpuras occur when the patient has normal platelets. In these cases it is thought that the drug is acting as a hapten and combines with vessel walls to form an antigen. Antibodies are produced but the target in this case is the vascular wall, and the platelets themselves are not affected. More commonly, drug purpura is asso-

ciated with thrombocytopenia. It is thought that the drug combines with platelets, making them antigenic; the patient produces an antibody to the platelet-antigen complex and destroys the platelets. Others believe that antigen-antibody complexes are formed and these complexes just happen to get absorbed by the platelets which, as innocent bystanders, get destroyed.

A form of acute ITP that is associated with recoveries and relapses is extremely rare and difficult to distinguish from chronic ITP. However, in chronic ITP platelets have a decreased life span all the time. Although the platelet count may fluctuate, the patient is never going to have a normal count. The platelet is always going to have a decreased life span. In contrast, patients with acute ITP with relapses have intervals in which they have a normal platelet life span and a normal platelet count. Acute ITP with relapses is extremely rare. When it occurs, we follow the patient at monthly intervals for up to a year, getting platelet counts, to determine the group in which he belongs. Some patients with ITP and relapses eventually may be cured spontaneously, but it may take a long time.

Many people believe that steroids should be given only in selected cases, such as for the child who is hemorrhaging, has hemorrhages of the fundi, or has massive epistaxis. They would give high doses of steroids for at least the first two weeks and then decrease the dosage, even though the platelet count itself may remain low. Other physicians put most patients with ITP on steroids, at least for the first two weeks. However, if one has a child who has a platelet count of 30,000 or 40,000 and has no bleeding episodes or perhaps had a more acute phase of the disease a week or so before and that is over, most hematologists would follow the patient without putting him on steroids. We elected to start our patient on steroids. In the clinic we cut the dosage, but her platelets fell again.

We will continue to follow this child in our clinic. About 90% of similar patients will have a return to normal of their platelet count. By arbitrary definition her disease will be chronic ITP if she still has low platelets after a year. At that time, we would probably elect to do a splenectomy which would cure at least two-thirds of such children. However, if her platelet count is not markedly low, and she is not having any bleeding episodes, we might delay splenectomy beyond a year. We worry about the post-splenectomy syndrome of pediatrics. About 50% of children under the age of 6 have an increased incidence of pneumococcal infections including sepsis when their spleen is removed. The reason is not entirely known. Thus, we would like to defer doing a splenectomy if possible.

One of the new ways to treat chronic ITP in older children is by use of Imuran and other immunosuppressive drugs. For the most part, they have so far not been very successful and are still in the investigative stage.

Questions

QUESTION: Is administration of platelet concentrates of any value?

DR. JONES: Administration of platelets generally is not helpful because they are rapidly destroyed and hence do little good. Platelets are indicated only if the child is having massive hemorrhages or hemorrhages of the fundi, i.e., a life threatening situation or potentially dangerous situation. Under such circumstances, although the platelets will be destroyed, they may aid in stopping the bleeding temporarily while waiting for the beneficial effect of steroids. Supportive packed red cells or whole blood transfusions are given as indicated in any child who is bleeding.

Summary

ITP in the child has been discussed, and one notes its benign course in the majority (over 90%) of cases and the use of splenectomy only in chronic cases. ITP in the child seems to be different disease entity from its counterpart in the adult.

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1. Lusher, J. M. and Zuelzer, W. W.: Idiopathic Thrombocytopenic Purpura in Childhood. *J. Pediat.*, 68:971, (June) 1966.
2. Baldini, M.: Idiopathic Thrombocytopenic Purpura. *New Eng. J. Med.*, 274:1245, 1301, 1360, (June) 1966.

ELECTROCARDIOGRAM OF THE MONTH

AGE: 70 SEX: Female BUILD: Stocky BLOOD PRESSURE: 130/80

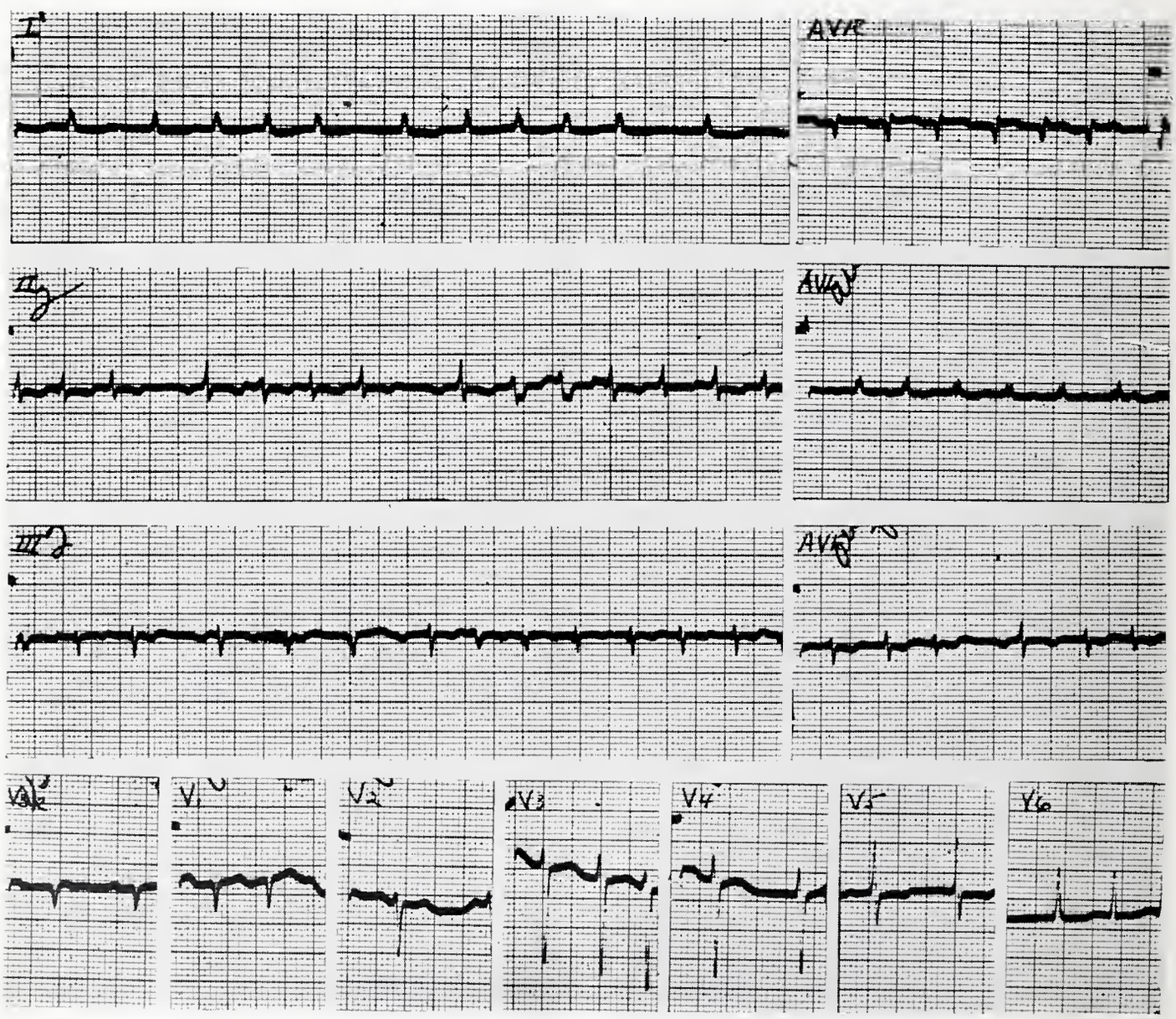
CARDIAC DIAGNOSIS: Undetermined.

OTHER DIAGNOSES: Myxedema.

MEDICATION: Digitalis 2 weeks ago. No other information.

HISTORY: Mental retardation. Cyanotic attacks, one month.

See **answer on page 500**



The Department of Medicine, University of Arkansas Medical Center
James S. Taylor, M.D., Professor of Medicine

RADIOLOGY CASE OF THE MONTH

Prepared by the
Department of Radiology, University of Arkansas
School of Medicine, Little Rock

See answer on page 500

R. L. Fincher, M.D.



HISTORY: This 34-year-old white female presented with a three month history of "fullness" in pelvis and back pain. Physical examination revealed a pelvic mass.



PUBLIC HEALTH AT A GLANCE

PKU Screening Program

With the cooperation of many physicians and hospital personnel throughout the state, the Arkansas State Department of Health is conducting a screening program aimed at the early detection of phenylketonuria.

The procedure in the hospital is simple, consisting of a heel puncture to collect the specimen of blood and then mailing the specimen to the State Health Department laboratory. Reports of the results are mailed, unless the report is positive. If there is a positive report, the physician is notified immediately by telephone.

Early discharge creates the major problem in the hospitals. The optimum time for collecting the blood is after 48 hours of milk formula, but very few mothers and infants remain hospitalized this long. There has been a sufficient number of babies who have shown a high enough serum phenylalanine level after 12-24 hours of formula to justify the blood test prior to discharge from the hospital. However, if the specimen is taken before the infant has been on milk for 48 hours, it is suggested that a repeat test be made before 6-8 weeks of age as a precautionary measure and to guard against the possibility of missing a case of phenylketonuria.

The laboratory services and the filter papers are furnished free of charge to the participating hospitals. At the present time, most of the hospitals offering obstetrical service, as well as many private physicians and clinics, are participating in the screening program.

Even though the national incidence of phenylketonuria is approximately 1:10,000-20,000, the incidence in Arkansas is approximately 1:7,000. For this reason it is felt that the screening program is valuable and is of great importance. Detection using the specimen of blood can be made within the first few days of an infant's life, as opposed to 6-8 weeks of age if the urine test is used, thus enabling the physician to begin treatment early and hopefully preventing severe brain damage.

The nutritionists in the Maternal and Child Health Division of the State Health Department work closely with the physicians and parents on diets for children with phenylketonuria. Close supervision of the diet is carried on, and advice is readily available if and when it is needed.

There are approximately 20 known cases of phenylketonuria in Arkansas at the present time. With the continued cooperation of physicians and hospital personnel, we can hope for early detection and diagnosis of phenylketonuria and possibly alleviate some of the many problems associated with severe mental retardation.

PKU Screening Program



● Hospitals Participating in Arkansas State Department of Health Screening Program.

▲ Hospitals Conducting Their Own Screening Program.



EDITORIAL

The Hepato-Renal Syndrome

Alfred Kahn, Jr., M.D.

One of the severest complications of liver disease is that of kidney failure. This used to be called hepato-renal syndrome. The causes of this were largely unknown. More sophisticated research methods have enabled investigators to understand this condition better.

Tristani and Cohn (The Journal of Clinical Investigation, Volume 46, page 1894, December, 1967) studied "Systemic and Renal Hemodynamics in Oliguric Hepatic Failure: Effect of Volume Expansion." They postulated that since many of these patients have had no previous known kidney disease, decreased renal perfusion might account for the renal failure. 21 patients with cirrhosis were studied; the patients had simultaneous catheterization of the renal artery and renal vein. In addition to the renal vessel catheterizations, the patient had certain other vascular and hepatic studies. The patients were studied before and after the infusion of Dextran which acted as a blood volume expander. The following measurements were tabulated: arterial pressure, mean arterial pressure, cardiac output, cardiac index, systemic vascular resistance, right atrial pressure, heart rate, stroke, volume, blood volume, renal blood flow, renal fraction, renal resistance, renal venous pressure, and renal blood volume. In 13 of 15 patients who had a decreased urinary output, the renal blood flow was decreased. The decreased renal blood flow was accompanied by high renal vascular resistance and this may be a cause and effect relationship. The kidneys in these cases received decreased fraction of the cardiac output. The vasoconstriction seemed to the authors to be a manifestation of a generalized vasoconstriction throughout the body. After volume expanders were used in these patients, renal vascular resistance decreased, and cardiac output increased; it was thought that the generalized vasoconstriction might be the body's adoptive mechanism to low cardiac output. The cause of the reduced cardiac output is unknown, and after dextran treatment it tends to fall toward the pre-infusion level. In a group of cirrhotic patients with a higher than normal cardiac output, decreased plasma volume did not seem to be a factor in oliguria as they had a normal circulating blood volume. The renal blood flow in these patients was normal; expansion of fluid volumes did produce some benefit in these patients but in general the oliguria seems unexplained on the basis of pure hydraulics.

"Renal Failure in Patients with Cirrhosis of the Liver" was evaluated by determining intra-renal blood flow and by observing the response to angiotensin. The authors of this report, Schroeder, Shear, Sancetta, and Gabrizda, were attempting to determine if an altered intra-renal hemodynamic pattern was a major cause of the so-called hepato-renal syndrome. 22 patients were studied; on a balanced diet with good hydration, the patients were studied with inulin and para-amino hippurate while catheter samplings and pressure recordings were made from the brachial artery, renal vein, and right atrium; cardiac output was studied by a dye dilution method using Indocyanine green. Para-amino hippurate, which is removed from the blood perfusing the renal cortical tubular epithelium, was extracted in a subnormal manner in eight of the patients studied. These findings were accompanied by a reduction in the glomerular filtration rate, renal plasma flow, renal blood flow, and urine flow rate; Schroeder, et al., felt

that the decreased para-amino hippurate extraction was an accompaniment of these manifestations of renal failure rather than the result of these downward deviations. They feel that the best explanation of these phenomena is that in cirrhotics there is a renal vasoconstrictive mechanism which shunts blood from the renal cortex to the renal medulla. Angiotensin did not seem to produce any consistent change in the intra-renal blood flow and thus should not be implicated in these intra-renal shunts of blood.

McCloy, Baldus, Maher, and Summerskill investigated "The Effects of Changing Plasma Volume, Serum Albumin Concentration, and Plasma Osmolality on Renal Function in Cirrhosis." They studied 22 patients with cirrhosis using albumin and sodium chloride infusions and relating them to renal clearance studies using inulin and para-amino hippurate. After the first albumin infusion, there was an increase in effective renal plasma flow, but there was no change in glomerular filtration rate; following multiple albumin infusion, even the effective renal plasma flow was not appreciably increased. A plasma transfusion increased the plasma volume and this was sustained by repeated plasma transfusions despite which neither the glomerular filtration rate nor the effective renal blood flow increased after the repeated transfusions. Plasma transfusions did not increase the urinary output. Sodium chloride infusions did not significantly alter renal hemodynamics nor did sodium chloride increase urine output; also, sodium chloride in the urine did not increase in contrast to normal man.

The so-called hepato-renal syndrome remains an enigma despite studies using very advanced hemodynamic techniques. Perhaps the best explanation currently available is that there is an intra-renal vascular shunt which deviates blood from the renal cortex.

ANSWER—Electrocardiogram of the Month

A: 170

RATE: V: App. 140 RHYTHM: Poroxysmol otriol tochycordio c vorioble block.

PR: .... sec. QRS: .06 sec. QT: .26 sec.

SIGNIFICANT ABNORMALITIES:

Atriol tochycordio c vorioble block ond occosionol ventriculor premoture systoles.

Low voltoge extremity leods.

T obnormolities, non-specific.

INTERPRETATION: Abnormol.

Poroxysmol otriol tochycordio c vorioble A-V block, PVCs, non-specific T chonges, low voltoge.

ANSWER—Radiology Case of the Month

DIAGNOSIS:

Dermoid cyst of ovory.

DISCUSSION:

The ovorion dermoid cyst represents o benign cystic subdivision of ovorion terotomo. The terotomotous elements of o dermoid ore primorily ectodermol in origin ond consist of o tooth or tooth-like structure. The presenting comploint in most coses is vogue bock poin ond o sensotion of o fullness in the pelvis. Molignont degenerotion occurs in only three percent of the coses.

The clossicol rodiogrophic findings consist of o pelvic moss with o rodiolucent center due to its lipid interior. The rodiolucency is surrounded by o dense outer ring. In obout thirty-five percent of the coses the moss will contoin colcificotion, usuolly in the form of o tooth or tooth-like structure.

REFERENCES:

1) Peterson, W. F., et ol.: Benign Cystic Terotomo of the Ovory. Amer. J. Obst.-Gyn., 70:368, 1965.

2) Novok, E. R., ond Jones, G. S.: Novok's Textbook of Gynecology. The Wilkins ond Wilkins Compony, 1966.

MEDICINE IN THE NEWS

Interstate Reciprocity

The following statement from the Department of Health Manpower is of particular interest to the Arkansas Medical Society. For this reason it is being published in the Journal of the Arkansas Medical Society.

The Department of Health Manpower is pleased to attach a copy of the statement entitled "Interstate Reciprocity" in keeping with the following action of the AMA House of Delegates at its December, 1969, Clinical Convention that this statement: ". . . be sent to all constituent and component medical societies, health planning agencies and other local, regional and national groups concerned with health manpower shortages."

Statement of Interstate Reciprocity *

The Council on Health Manpower considered the contention of the President's Commission on Health Manpower that lack of complete interstate reciprocity is a major contributing factor to the current adverse interstate distribution of physicians in the United States. In studying this matter, the Council reviewed reciprocity arrangements between the states, the distribution of physicians between states and the reasons for the differences in this physician distribution.

A tabulation covering 13 states offers the following data concerning interstate reciprocity and distribution of physicians:

Eleven states have reciprocal agreements with, or endorse certificates of, all other states in the Union.[1] Seven of these are listed below, together with the physician/population ratio for each.

	Physician/ Population Ratio[2]
Connecticut	1:614
Ohio	1:832
Virginia	1:958
Indiana	1:1104
North Dakota	1:1171
South Carolina	1:1325
South Dakota	1:1326

Eight states have reciprocal agreements with, or endorse certificates of, all but one other state.[3] Four of these are listed below.

	Physician/ Population Ratio
Massachusetts	1:562
Rhode Island	1:697
Maine	1:1024
Kentucky	1:1124

If there were a consistent relationship between the degree to which one state extended reciprocity to others and the adequacy of that state's physician supply, one would expect that the physician/population ratios in the eleven states listed above would be uniformly favorable. This expectation is not borne out by the data; the physician/population ratio varies from well below the national average in Massachusetts to almost twice the national average in South Dakota.

This lack of relationship between reciprocity and adequacy of a state's physician supply is further illustrated by the figures for Hawaii and Florida. Although they maintain no reciprocity or endorsement arrangements with any other state, Hawaii and Florida have favorable physician/population ratios of 1:761 and 1:842, respectively.

From this tabulation the Council finds no evidence which would indicate that complete interstate reciprocity would alleviate any current inequitable interstate distribution of physicians in the United States.

A 1967 American Medical Association survey[4] of physicians practicing in rural areas collected information regarding the factors which these physicians considered in choosing to practice in a rural area. The following quotation from the summary of the paper[5] expresses the results of this survey:

"Factors which influenced physicians to come to their present locations are obviously complex.

* Adopted by AMA House of Delegates, Denver, Colorado, December, 1969.

Physicians may be influenced by some particular individual characteristics (liked the town when driving through) or by situational factors (war, depression). But certain patterns did emerge. The most frequently mentioned influences were: best opening when ready to practice, geographical preference, and family and friends. In finding a location, the hometown preference or suggestions of friends were most often listed, followed by place of internship nearby as well as assistance of state and AMA physicians' placement services.

"Access to continuing medical education programs and opportunities for professional growth were of concern to physicians in the sample, and in particular to those practicing in isolated rural counties. They also viewed hours of practice, medical facilities and personnel available, and emergency medical facilities as problems. They and their families missed the cultural and social opportunities found in urban areas."

The Board of Trustees and its Council on Health Manpower recommend that constituent and component medical societies, health planning agencies and other local, regional and national groups concerned with health manpower shortages, direct increased attention to these and similar factors which may be responsible for influencing distribution of physicians in relation to need for health services.

REFERENCES

1. *Journal of the American Medical Association*, June 17, 1968. Other states in this category include Tennessee, North Carolina, Nebraska, and Montana.
2. Non-federal physicians providing patient care, *Distribution of Physicians, Hospitals, and Hospital Beds in the U. S., 1967;* 1967 Civilian Population, Health Resources Statistics, 1968 PHS Publication No. 1509.
3. Other states in this category include Michigan, Minnesota, Texas, and Vermont.
4. Council on Rural Health.
5. Submitted to *Public Health Reports* for publication.

THE MONTH IN WASHINGTON

The Nixon Administration called for limitations on Medicare and Medicaid reimbursements to physicians and hospitals.

Health, Education and Welfare Under Secretary John G. Veneman told the Senate Finance Committee that, because of rising costs, "it is now time to make some fundamental changes in the law which governs Medicare and Medicaid reimbursements." He said the reasonable cost and reasonable charge criteria in the Medicare law had not provided opportunity for major cost-control efforts.

"We need an incentive system of institutional reimbursement and we need changes in the law that will help control the increases in the amount that the Medicare program will recognize in the charges of individual practitioners. . . .

"I believe . . . that the law should be changed so as to limit further the rate at which increases in physicians' fees would be recognized by Medicare. The basic difficulty at present is that despite the improvements which have been made in applying reasonable charge guidelines, the best that can be done under present law is to introduce a lag in the recognition of fee increases. . . .

"Customary and prevailing charges under the program and the fees recognized by the carriers under comparable circumstances in their own business reflect, in the long run and after a suitable lag in recognition of fee increases, whatever physicians choose to charge the public generally in a market where growing demand is pressing increasingly on the limited supply of health personnel.

"Reliance on Blue Shield fee schedules as the limiting factor in Medicare reimbursement, as suggested in the Senate Finance Committee staff report, however, would not seem to us to have long-run viability. Tying payments under a program as large as Medicare to Blue Shield schedules would surely exert a major upward pressure on those schedules. . . .

"We believe that it is necessary to move in the direction of an approach to reasonable charge reimbursement that ties recognition of fee increases to an index.

"Under such an approach, allowable charges recognized for Medicare would next year be generally limited to either presently recognized charges or to a new prevailing level set at the 75th percentile of 1969 average customary charges for a given service in an area. In the future the prevailing charge screen would move upward only in proportion to increases in an index made up of pertinent portions of wage and price indices. Under such an approach, recognition of fee increases would continue, but only in relation to things that are happening in other parts of the economy and that have a bearing on the physician's cost of doing business."

The American Medical Association said that any proposal for further limitations on phy-

sicians' fees under the government programs would be unwise.

"For all practical purposes, a freeze on physicians' fees under the two federal programs has been in effect for more than a year and has proven to be ineffective," Gerald D. Dorman, M.D., AMA President, said. "The costs of the program have continued to rise in spite of the freeze.

"Physicians are disturbed by threats of additional federal controls.

"Burdening these busy doctors with more red tape and restricting payments to unrealistically low levels may drive them away from participating in Medicare and Medicaid. Then the government will have discriminated against many people who need medical care. . . .

"The national interests would be better served if everyone joined with the American Medical Association in its efforts to provide more physicians."

* * *

The National Society for Medical Research said that no valid finding on the effects of marijuana can be expected for another two to seven years.

Science Research Society said part of the difficulty is there is no standard yardstick for evaluating marijuana in scientific studies. The basic weed from which marijuana is made can vary from plant to plant and from country to country, the group said.

But the Society cautioned in a statement: "Until scientifically proven results are obtained, it appears as foolhardy to smoke marijuana as it would be to take any other unknown drug or chemical agent just for kicks."

The Society said two projects are now going on in an effort to achieve scientific standardization in marijuana studies.

* * *

The federal government has negotiated new agreements with France and Turkey aimed at stemming the flow of heroin into this country.

But, in announcing the agreements, John E. Ingersoll, director of the Bureau of Narcotics and Dangerous Drugs, said the government's long-range objective in dealing with the problem is "to induce the medical community to find adequate substitutes" for opium, from which heroin is derived.

Ingersoll admitted the U. S. was asking a great deal of Turkey where opium has been grown for centuries.

"But when you've got over 900 deaths last year from heroin, 224 of them teen-agers, in one city, I think you've got a right to start hollering," he said. "There have been three deaths a day from heroin in New York City this year. It is the major cause of death for 18 to 35-year-olds in New York City."

Ingersoll estimated 80 per cent of the 2.5 to 3 tons of heroin smuggled into the U. S. annually comes from the poppy fields of Turkey via the clandestine laboratories of France where the opium is refined into heroin.

The agreement with Turkey includes a $3 million loan approved by the agency for international development in 1968. The money is to be used partly to help the Turks substitute crops like sugar beets and sorghum for opium and partly to equip and train a 460-man narcotics police force.

The U. S. government with France calls for frequent exchange of meetings in Washington, D. C., and in Paris to exchange information on such matters as the known drug traffickers and trafficking routes.

France also has assigned a force of 300 police to fight narcotics internally and 30 police to combat it at the international level. Ingersoll's narcotics bureau will increase its manpower in France next year and also will engage in a cross-training program with French police.

* * *

Congress finally approved an appropriation bill acceptable to President Nixon to provide funds for the Health, Education and Welfare and the Labor departments for the 1970 fiscal year which began last July 1.

The two departments operated under stopgap Congressional resolutions while Nixon and Congress battled over how much money the bill should provide. The President vetoed the first bill passed by Congress on the ground that it would be inflationary because it exceeded his budget by $1.2 billion. Congress sustained the veto but still refused to go all the way with Nixon in cutting funds for the two departments. The second bill totaled $19.4 billion, $680 million more than the President requested. But Nixon accepted the compromise amount when Congress added a provision authorizing him to withhold two per cent of the funds.

The second bill had $176 million in Hill-Burton hospital funds, compared with $258 million in the vetoed measure. The appropriation for health facilities, educational research and libraries was cut from $149 million to $126 million.

Health manpower direct loan funds remained the same, $234.5 million, but an administration spokesman said it was planned to withhold $15.5 million. Other announced plans to withhold funds in the health field included:

—$6 million from $108.8 million for air pollution control;

—$6.3 million from $35.5 million for construction of community mental health centers;

—$6.3 million from $360.3 million for mental health programs;

—$8.7 million from $146.3 million for the National Institute of Arthritis and Metabolic Diseases;

—$5.7 million from $107 million for the National Institute of Neurological Diseases and Stroke;

—$1.3 million from $103.7 million for the National Institute of Allergies and Infectious Diseases;

—$10.3 million from $164.6 million for the National Institute of General Medical Sciences;

—$7 million from $76.6 million for general research and services.

* * *

The Food and Drug Administration announced plans to require that a warning leaflet be included in every package of birth control pills.

"I have come to the conclusion that the information being supplied to the patients in the case of the oral contraceptive is insufficient and that re-evaluation of our present policies is in order," FDA Commissioner Charles C. Edwards, M.D., told the Senate Monopoly Subcommittee at on of its public hearings on side effects of birth control pills.

A proposed draft of the warning leaflet states that "there is a definite association between blood-clotting disorders and the use of oral contraceptive."

It emphasizes the importance of reporting any side effects to "your doctor."

"All of the oral contraceptive pills are highly effective for preventing pregnancy, when taken according to the approved directions," the proposed draft says. "Your doctor has taken your medical history and has given you a careful physical examination. He has discussed with you the risks of oral contraceptives and has decided that you can take this drug safely.

"This leaflet is your reminder of what your doctor has told you. Keep it handy and talk to him if you are experiencing any of the conditions you find described. . . .

"Besides women who have or who have had blood clots, other women who should not use oral contraceptives are those who have serious liver disease, cancer of the breast or certain other cancers and vaginal bleeding of unknown cause.

"If you have heart or kidney disease, asthma, high blood pressure, diabetes, epilepsy, fibroids of the uterus, migraine headaches, or if you have any problems with mental depression, your doctor has indicated you need special supervision while taking oral contraceptives.

"Even if you don't have special problems, he will want to see you regularly to check your blood pressure, examine your breasts and make certain other tests."

An American Medical Association spokesman questioned the tone of the language of the FDA's draft of the leaflet.

"In general, it is a good idea to have a package insert but the text of the FDA proposal raises serious question about the relationship between doctor and patient," he said. "It puts the full responsibility on the physician, but oral contraceptives generally are prescribed more as a convenience to a patient than as a medication. The patient must share responsibility both morally and legally and be alerted to her own responsibility."

The FDA now requires that pharmaceutical manufacturers only warn physicians and pharmacists of side effects and possible hazards of taking birth control pills. Makers of the drugs were given opportunity to comment on the proposed leaflet after its publication in the Federal Register.

* * *

Identical bills designed to increase the number of physicians and allied health personnel in family medicine have been introduced in the House and Senate. Sponsors of the legislation say that prospects are good for Congressional approval this year.

The legislation would authorize $50 million for the current fiscal year of 1971, $75 million for fiscal 1972 and $100 million for each of the

next fiscal years for grants to medical schools and hospitals. The grants would be to help medical schools and hospitals establish departments and programs in family practice of medicine and to encourage the training of allied health personnel in that field of medicine.

Sen. Ralph W. Yarborough (D.-Tex.) sponsored the legislation (S. 3418) in the Senate. Thirty-one other senators, both Democrats and Republicans, were co-signers of the bill. Yarborough is chairman of both the Senate Labor and Public Welfare Committee and the Subcommittee on Health which will handle the legislation. An aide said the senator would schedule hearings and that he was confident the Senate would approve the legislation this year.

Rep. Fred B. Rooney (D.-Pa.) introduced the bill (H.R. 15793) in the House first this year. Rooney is a member of the House Interstate and Foreign Commerce Committee which will handle the legislation on that said of the Capitol. Several other House members also introduced it separately.

Aids to both Yarborough and Rooney said they had worked with representatives of the American Academy of General Practice in drafting the legislation.

Childhood Deafness Symposium Held In El Dorado

Sponsored by the University of Arkansas Medical Center, Division of Otolaryngology, and the Setliff Ear Clinic and Hearing Center of El Dorado, an April 18th symposium on early diagnosis and treatment of childhood deafness was held at the Arkansas Power and Light Company Building in El Dorado.

The program, arranged by Dr. Reuben C. Setliff, III, had as guest participants the following: Aram Glorig, M. D., Director of the Callier Hearing and Speech Center of Dallas; Walter Nance, M. D., Ph.D., Professor of Medical Genetics at Indiana University in Indianapolis; Ann Sitton, M. A., Pediatric Clinical Audiologist at Vanderbilt University in Nashville; and Irvin Shore, M. A., Director of Hearing Clinics, Central Institute for the Deaf of St. Louis.

Legislation Permitting Single Practitioner to Form Corporation

During the 1970 special session of the Arkansas Legislature, the following Act was enacted:

An Act to Amend Subsection (a) of Section 2 of Act 155 of 1963 [Ark. Stats. (1947) Section 64-2002 (a)], and Section 3 of Act 155 of 1963 [Ark. Stats. (1947) Section 64-2003], to Revise the Arkansas Professional Corporation Act to Permit One or More Persons to Form a Professional Corporation; to Amend Section 2 and 3 of Act 179 of 1961 [Ark. Stats. (1947) Sections 64-1702 and 64-1703], to Permit One or More Persons to Form a Medical Corporation; to Amend Sections 2 and 3 of Act 471 of 1971 [Ark. Stats. (1947) Sections 64-1802 and 64-1803] to Permit One or More Persons to Form a Dental Corporation; and for Other Purposes.

Be It Enacted by the General Assembly of the State of Arkansas:

Section 1. Subsection (a) of Section 2 of Act 155 of 1963 the same being Arkansas Statutes (1947) Section 64-2002, is hereby amended to read as follows:

(a) Formation of Corporation. One (1) or more persons duly and properly licensed under and pursuant to the laws of the State of Arkansas to render the same type of professional services, as herein defined, may form a corporation, pursuant to the Arkansas Business Corporation Act (Arkansas Statutes (1947) Section 64-101), to own, operate and maintain a professional corporation, and to engage in the professional services thereby authorized, by and through its licensed shareholders, directors, officers and employees only; it being mandatory that such professional services may be rendered by or through persons who are duly and properly licensed, individually, to engage in the profession.

Section 2. Section 3 of Act 155 of 1963, the same being Arkansas Statutes (1947) Section 64-2003 is hereby amended to read as follows:

Section 3. Application of the Arkansas Business Corporation Act. The Arkansas Business Corporation Act, Act 576 of 1965, shall be applicable to such professional corporations, including their organization, and they shall enjoy the powers and privileges and be subject to the duties, restrictions and liabilities of other corporations, except so far as the same may be limited or enlarged by this Act. If any provision of this Act conflicts with the Arkansas Business Corporation Act, this Act shall take precedence."

Section 3. Section 2 of Act 179 of 1961, the same being Arkansas Statutes (1947) Section 64-1702 is hereby amended to read as follows:

Section 2. Formation of Corporation — Purposes. One (1) or more persons licensed pursuant to the Arkansas Medical Practice Act may associate to form a corporation pursuant to the Business Corporation Act to own, operate, and maintain an establishment for the study, diagnosis and treatment of human ailments and injuries, whether physical or mental, and to promote medical, surgical and scientific research and knowledge; provided medical or surgical treatment, consultation or advice may be given by employees of the corporation only if they are licensed pursuant to the Medical Practice Act.

Section 4. Section 3 of Act 179 of 1961, the same being Arkansas Statutes (1947) Section 64-1703 is hereby amended to read as follows:

Section 3. Application of Business Corporation Act. The Business Corporation Act shall be applicable to such corporations, including their organization, except that the required number of incorporators of a medical corporation shall be one (1) or more, and they shall enjoy the powers and privileges and be subject to the duties, restrictions and liabilities of other corporations, except so far as the same may be limited or enlarged by this act. If any provision of this act conflicts with the Business Corporation Act, this act shall take precedence.

Section 5. Section 2 of Act 471 of 1961, the same being Arkansas Statutes (1947) Section 64-1802, is hereby amended to read as follows:

Section 2. Formation of Corporation — Purpose. One (1) or more persons licensed pursuant to the Arkansas Medical Practice Act may associate to form a corporation pursuant to the Business Corporation Act to own, operate and maintain an establishment for the study, diagnosis and treatment of dental ailments and injuries, and to promote dental and scientific research and knowledge; provided treatment, consultation, or advice may be given by employees of the corporation only if they are licensed pursuant to the Dental Practice Act.

Section 6. Section 3 of Act 471 of 1961, the same being Arkansas Statutes (1947) Section 64-1803, is hereby amended to read as follows:

Section 3. Business Corporation Act Applicable. The Business Corporation Act shall be applicable to such corporations, including their organization, except that the required number of incorporators of a dental corporation shall be one (1) or more, and they shall enjoy the powers and privileges and be subject to the duties, restrictions and liabilities of other corporations, except so far as the same may be limited or enlarged by this Act. If any provision of the Act conflicts with the Business Corporation Act, this Act shall take precedence.

Section 7. It is the sole purpose and intent of this Act to permit the formation of a professional corporation by one (1) or more persons under the provisions of Act 155 of 1963.

Section 8. All laws and parts of laws in conflict with this Act are hereby repealed.

Council Minutes

The Council of the Arkansas Medical Society met at 12:00 noon on Sunday, April 5, 1970, at the Sam Peck Hotel in Little Rock. Present were: Wood, Fowler, Kennedy, Shuffield, Saltzman, Raney, P. Gray, Irwin, Duzan, Wynne, Bethel, Kolb, Orr, Applegate, Long, Whittaker, Norton, Chudy, Wilkins, Winston K. Shorey, George K. Mitchell, John T. Herron, Dr. Ervin E. Baden, Mr. Paul Harris, Mr. Joe Elliott, Mr. Bill Phillips, Mr. Paul Berry, and Mr. Paul Schaefer.

The Council transacted business as follows:

I. Chairman Wood introduced Mr. Joe Elliott, vice president of Medical Statistics, Inc., and Dr. Ervin E. Baden, president and medical director of Medical Statistics, Inc. Dr. Wood also introduced Mr. W. W. Phillips, business manager of Millard-Henry Clinic in Russellville.

II. Upon the motion of Saltzman and Kennedy, the Council approved Executive Committee action authorizing a reception for Dr. Roger Egeberg on May 5th.

III. Upon the motion of Long and Shuffield, the Council approved the appointment of Dr. Ben Saltzman, Dr. H. W. Thomas, Dr. L. A. Whittaker, Dr. Stanley Applegate, and Mr. Paul C. Schaefer as trustees of the Arkansas Medical Society Pension Trust Fund.

IV. Upon the motion of Fowler and Wynne, the Council approved the appointment of Dr. James Weber of Jacksonville to represent the Arkansas Medical Society on the Arkansas Health Careers Council.

V. Upon the motion of Applegate and Fowler, the Council approved travel expenses for Mr. Eugene Warren to attend a conference of Medical Society legal counsel to be held in Chicago in September.

VI. The Council heard Dr. Baden and Mr. Elliott speak on their new program of computerized collection of statistics on fees and medical services. Upon the motion of Shuffield and Long, the Council voted that the information be received and that county societies be notified that the information is available to them.

VII. Chairman Wood called the attention of the Council to the efforts in Congress by the chiropractors to authorize chiropractors to receive payments for care under Medicare and Medicaid. No action was taken.

VIII. After discussion by Dr. Wilkins and the reading of a letter from the chairman of the Education Committee, Dr. Parker, by Mr. Schaefer, the Council voted to approve the assumption of AMA-ERF activities in Arkansas by the Woman's Auxiliary to the Arkansas Medical Society.

IX. Mr. Paul Berry reported for Dr. Bransford on planning for an emergency health services conference tentatively scheduled for August 21st at the Medical Center.

X. Dr. Charles Wilkins recommended that the Arkansas Medical Society endorse the proposed new Constitution for the State of Arkansas. After discussion, the Council voted to take no action on the Constitution at this time.

XI. The Council heard a report by Dr. Amail Chudy on his trip to a convention of Speakers of the House of several state medical societies. Dr. Chudy reported that the meeting was worthwhile and he felt that his handling of House of Delegates' matters would be expedited because of his experience.

Approved: John P. Wood, M.D.
Chairman of the Council

RESOLUTIONS



Dr. G. W. Stanley Ish

WHEREAS, the members of the Pulaski County Medical Society note with sincere sorrow the recent death of its esteemed member, Dr. G. W. Stanley Ish, and

WHEREAS, Dr. Ish served the community in his professional capacity as a physician for more than fifty years, and

WHEREAS, his contributions to the betterment of the community were noteworthy and generous;

BE IT THEREFORE RESOLVED: That the members of the Pulaski County Medical Society take this means to express to the family of Dr. Ish their deepest sympathy, and

That this resolution be made a part of the permanent minutes of the Society, and

That a copy of this resolution be forwarded to the Arkansas Medical Society for publication in the Journal.

By Direction of the Memorials Committee
T. Duel Brown, M.D., Chairman
Henry Hollenberg, M.D.
Robert Watson, M.D.

THINGS TO COME



Announcement
National X-ray Exposure Study

The Public Health Service will conduct a national study to obtain information on population exposure to diagnostic and therapeutic X-radiation. It will begin on April 13th and will be made jointly by the Bureau of Radiological Health and the National Center for Health Statistics. The study was planned with the advice of a group of radiologists and physicists representing the American College of Radiology.

The study follows two earlier national X-ray surveys by Public Health Service agencies. The first was conducted in 1961 to estimate the volume of medical and dental X-ray visits in the United States. A more comprehensive study was made in 1964 to extend the X-ray visit data to include exposure and dose estimates for the U. S. population in that year.

The 1970 study will use the same collection and analysis methods employed in the 1964 survey so that results of the investigations will be directly comparable. This will afford the oppor-

tunity to evaluate the effectiveness of programs to improve X-ray practice and reduce unnecessary exposure. The 1970 study also will aid in establishing guidelines for future programs.

The new study will be conducted in three phases:

— A household interview survey to obtain the X-ray visit experience of a representative sample of the U. S. population. This phase will run from April 13th through October 12th and will cover about 20,000 households and 65,000 persons.

— A follow up questionnaire to obtain examination data from X-ray facilities identified in the household survey. From May through December, approximately 5,000 facilities will be asked to supply these details. Authorization to request the information will be obtained in advance from household respondents.

— An X-ray equipment survey to provide physical measurements in a selected sub-sample of X-ray facilities. This phase will be conducted by specially trained State and Federal radiological health personnel.

Based on data obtained during the household and facility surveys, a descriptive analysis of the population's X-ray experience in 1970 will be prepared. The information, which will be categorized by pertinent demographic and facility characteristics, will include estimates of numbers and rates for: (1) persons X-rayed, (2) X-ray visits, and (3) X-ray examinations and exposures.

Estimates of gonadal and genetically significent dose will be derived from the study findings by applying mathematical models developed at the Johns Hopkins and Emory Universities in collaboration with the 1964 study. It is also planned to extend these data into dose estimates for other selected body organs through the use of related research results.

Since this study is based on a small representative sample, the cooperation of each practitioner contacted in the follow up phase is essential to meet the study objectives. All information pertaining to individual patients, practitioners and facilities will be treated confidentially. Only statistical summaries will be made available for publication.

Additional information about plans for the survey may be obtained from the Bureau of Radiological Health, 1901 Chapman Avenue, Rockville, Maryland 20852.



PERSONAL AND NEWS ITEMS

Dr. Kemp Appointed to U of A Board

Dr. Charles E. Kemp of Jonesboro has been appointed by Governor Winthrop Rockefeller to a ten-year term on the University of Arkansas Board of Trustees. Dr. Kemp received both the B.A. and M.D. degrees from the University of Arkansas.

Dr. Fraunfelder Honored by Jaycees

Dr. Frederick Fraunfelder, University of Arkansas School of Medicine faculty member, was named as one of three Outstanding Young Men Award recipients for 1969-70 by the Arkansas Junior Chamber of Commerce. Nominations for the award came from 36 Jaycee Chapters throughout the State.

Dr. Christeson Is New Section Chief

Dr. William W. Christeson of Little Rock is the new full-time chief of the Urology Section of the Veterans Administration Hospital of Little Rock and North Little Rock. He is also associate clinical professor of urology at the University of Arkansas Medical Center.

Dr. Stuckey Named President-Elect

Dr. James G. Stuckey of Little Rock was named president-elect of the Southeastern Society of Plastic and Reconstructive Surgery. Dr. Stuckey will be elevated to the presidency of the organization in June, 1971.

Searcy Doctors Panelists at Conference

A May 15 conference at Harding College on "Medicine and Missions" saw Doctors Henry C. Farrar, T. A. Formby and Stan Schwartz serve as moderators of a panel discussing medical experiences with mission methods.

Dr. Coffey Addresses Kiwanis Club

In a speech to the local Kiwanis Club, Dr. George C. Coffey of Hot Springs said that the resort city was missing a great opportunity in not putting forth a larger effort to revive and expand use of the thermal waters available in that locale.

Doctors Attend Heart Disease Course

Doctors R. B. Benafield and Douglas A. Poindexter of Conway and Dr. Carl E. Northcutt of Stuttgart were among Arkansas physicians who attended the first in a series of five-day courses on new approaches to diagnosis and treatment of heart diseases. Held at the University of Arkansas Medical Center in Little Rock, the sessions are part of the continuing education program co-sponsored by the Arkansas Regional Medical Program.

Medical Center Doctors Fight Polio Epidemic in Bolivia

Dr. Roger Bost and Dr. Wayne Glenn, both of the University of Arkansas School of Medicine faculty, spent approximately two weeks recently in LaPaz and Cocabomba, Bolivia, aiding the fight there against an outbreak of polio. A plea for help from the United States State Department was made to Arkansas by virtue of the State's "partnership" with Bolivia in the Alliance for Progress. The two Arkansas physicians advised Bolivian doctors and medical personnel on the diagnosis and trained them in the use of artificial respirators.

Dr. Burton New Rotary President

Dr. Frank M. Burton became president of the Hot Springs Rotary Club when new officers for 1970-71 were elected in March by the club.

Pine Bluff Hospital to Continue Expanded Services Plans

The Jefferson Hospital Board of Pine Bluff voted at a March meeting to authorize continuing work on a plan to offer comprehensive outpatient and emergency care to area residents after hearing a report from Doctors Walter J. Wilkins, Jr., and Francis M. Henderson. The plan, according to Dr. Wilkins, had been originally conceived by Dr. Ralph R. Wooley, county health officer.

Dr. Dudley Honored

Dr. Guilford Dudley of Newport was recently presented a gold pin by the American Legion, distinguishing him as the first Arkansas physician who has served in Vietnam to have joined a local Legion post.

Dr. Headstream to Head Exhibits Committee

Dr. James W. Headstream of Little Rock has been appointed chairman of the Scientific Exhibits Committee for the Section of Urology of the AMA June meeting in Chicago.

Insurance Agent Honored

Mr. James R. Harper of the Rather, Beyer and Harper Insurance Agency in Little Rock, recently received a distinguished service award from the American Institute of Professional Association Group Insurance Administrators. He was cited



for achievement and outstanding contribution to the progress and development of association group insurance. Mr. Harper represents the agency which handles the disability, overhead expense, and umbrella liability group plans for members of the Society.



OBITUARY

Dr. G. W. Stanley Ish

Dr. G. W. Stanley Ish of Little Rock died March 15, 1970, at the age of 86. He was a surgeon and chief medical examiner and director of American Hospital of Little Rock.

Dr. Ish was a graduate of Talledega College in Alabama, Yale University, and Harvard Medical College. He was the medical examiner for the Boys Training School at Wrightsville.

Dr. Ish held a life membership in both the Pulaski County and Arkansas Medical Societies and was a member of the American Medical Association.

He is survived by his widow, Mrs. Ercell T. Ish, a son and two daughters.

Dr. James W. Amis

Dr. James W. Amis of Fort Smith died March 10, 1970, at the age of 73.

He was a veteran of both World Wars. A lifelong resident of Fort Smith, he was a graduate of the University of Arkansas School of Medicine.

Serving in the United States Navy During World War II, he attained the rank of captain. Dr. Amis was the last member of a Fort Smith pioneer family. He has no immediate survivors.



PROCEEDINGS OF SOCIETIES

Rubella Clinic Staged In Baxter County

Co-sponsored by the Baxter County Medical Society and the Arkansas Department of Health, with the cost underwritten by the Medical Society, more than a thousand children were vaccinated during a one-day free Rubella immunization clinic in Baxter County in February. Dr. Ben N. Saltzman, county health officer, was in charge of the arrangements and implementation of the clinic activities.

Cross County Sponsors Emergency Care Course

A three-day course in emergency health services was sponsored in March by the Cross County Medical Society in cooperation with the Department of Health. Sessions were held at the county courthouse located in Wynne.

Craighead-Poinsett County Chooses Officers

The Craighead-Poinsett County Medical Society's new officers are: Dr. H. W. Keisker, president; Dr. Glen Baker, secretary-treasurer; and Dr. John B. Kirkley, president-elect.

Woman's Auxiliary

The Union County Woman's Auxiliary sponsored an April 20th drug abuse education program for parents in the El Dorado High School gymnasium.



NEW MEMBERS

Boone County Medical Society announces DR. LINDELL M. KINMAN as a new member. Born in Marshall, Missouri, Dr. Kinman was a 1936 graduate of the University of Notre Dame, South Bend, Indiana. His M.D. degree was obtained at Washington University School of Medicine at St. Louis in 1940.

His internship was done at both St. Louis County Hospital and Deaconess Hospital of that city before serving in the United States Navy from 1942 to 1946. Returning to St. Louis County Hospital, Dr. Kinman completed urology residencies at that institution and later held teaching appointments in urology from St. Louis University from 1949 through 1952.

Formerly practicing in Roswell, New Mexico, and El Paso, Texas, Dr. Kinman, board certified

in urology, is a member of the South Central Section of the American Urological Association. His office address is 707 North Vine, Harrison.

Another new member of the Boone County Medical Society is JAMES DAVID MARTIN, M.D.

Dr. Martin is a native of Harrison. His premedical education was attained at both Arkansas Polytechnic College in Russellville and also Little Rock University. The M.D. degree was received by Dr. Martin from the University of Arkansas School of Medicine in 1966. He then did his internship at St. Vincent Infirmary in Little Rock. From 1967-1969, he was employed by the United States Public Health Service.

Now engaged in family practice, Dr. Martin's office address is Boone County Medical Center, 651 North Spring Street, P. O. Box 1095, Harrison.

Pulaski County Medical Society has announced the addition of nine new members. They are listed below in alphabetical order.

WILLIAM GARY DARWIN, M.D., was born in Hope and attended high school in Conway. His B.A. degree was obtained from Hendrix College.

Graduating from the University of Arkansas School of Medicine in 1959, Dr. Darwin interned at San Francisco General Hospital in San Francisco before serving two years active duty with the United States Air Force. A residency in surgery was done at Little Rock Veterans Hospital, and also a residency in industrial medicine was accomplished at University Hospital in Ann Arbor, Michigan.

Dr. Darwin is now engaged in general practice and industrial medicine at 6924 Geyer Springs Road in Little Rock.

HUBER FRAZIER KENNEDY, M.D., was born in Little Rock and attended public schools in England, Arkansas. Graduating with the B.A. degree from Hendrix College in 1960, Dr. Kennedy became a 1964 graduate of the University of Arkansas School of Medicine.

Internship was completed at Methodist Hospital in Dallas, Texas. Subsequently, a pediatric residency was also done at that hospital.

Dr. Kennedy served two years active duty in the United States Air Force. He now is in the practice of pediatrics at 500 South University, Suite 200, in Little Rock.

JAMES FLOYD KYSER, M.D., was born in Banks, Arkansas, and grew up in Camden.

In 1958, he graduated with the B.S. degree from Southern State College at Magnolia and received his M.D. degree in 1962 from the University of Arkansas School of Medicine. His internship was done at University Hospital in Little Rock.

After two years on active duty with the United States Army, Dr. Kyser completed an otolaryngology residency at Parkland Hospital from 1966 to 1969.

Board eligible, Dr. Kyser is in the practice of otolaryngology at 4942 West Markham in Little Rock.

ROBERT NASH McGREW, M.D., of Fort Smith, received his B.S. degree from Hendrix College in Conway.

A graduate of the University of Arkansas School of Medicine in 1962, Dr. McGrew did his internship at Hillcrest Medical Center in Tulsa, Oklahoma. He also completed a three-year residency at the University of Alabama Medical College in otorhinolaryngology where he was a teaching resident.

He is a member of the American Medical Association, the Centurian Club of Deafness Research Foundation, Phi Chi, and Alpha Epsilon.

ASHLEY SLOAN ROSS, JR., M.D., is a native of Arkadelphia and a graduate of Hendrix College in Conway.

Receiving his M.D. degree from the University of Arkansas School of Medicine in 1955, Dr. Ross then interned at Charity Hospital of Louisiana in New Orleans. Residencies in orthopedic surgery were also done at that hospital.

After completion of formal training, Dr. Ross was retained as an instructor in orthopedic surgery by the Louisiana State University School of Medicine and was engaged privately on the Staff of the Ochsner Clinic of New Orleans.

He is board certified by the American Board of Orthopaedic Surgery and a member of the American Medical Association, Southern Medical Association, and the American Academy of Orthopaedic Surgery.

Dr. Ross gives his address as 500 South University in Little Rock.

GEORGE DONALD RUCKER, M.D., was born in Nashville, Tennessee. Pre-medical education was attained at Northwestern State College of Louisiana in Natchitoches, graduating with a B.S. degree and, also, a M.S. in bacteriology.

Entering Louisiana State University School of Medicine, he was a 1965 graduate of that institution. His internship was done at Arkansas Baptist Hospital in Little Rock and a three-year residency in ophthalmology completed at Confederate Memorial Medical Center in Shreveport, Louisiana.

Dr. Rucker limits his practice to ophthalmology, and his office is at 516 Scott Street in Little Rock.

THOMAS WARREN SMITH, M.D., is a native of Little Rock.

His pre-medical education was done at Hendrix College, graduating with a B.S. in 1960.

Entering the University of Arkansas School of Medicine, Dr. Smith received his M.D. diploma in 1964 and then interned at Methodist Hospital in Dallas, Texas.

After serving two years on active duty with the United States Air Force, Dr. Smith returned to Methodist Hospital for a three-year residency in pediatrics, which was finished in 1969.

Now practicing pediatrics, Dr. Smith is located at Arkansas Pediatric Clinic, Suite 200, 500 South University, Little Rock.

JOHN MACK TUDOR, JR., M.D., was born in Pine Bluff. He is a 1960 graduate of Hendrix College.

Dr. Tudor achieved his M.D. degree from Harvard Medical School, class of 1964. His internship was done at King County Hospital in Seattle, Washington. He then did a residency in internal medicine at the University of Washington School of Medicine in Seattle.

After serving two years in the United States Air Force, Dr. Tudor completed a second residency. This residency was in family practice at the University of Miami and Jackson Memorial Hospital in Miami, Florida.

A member of the American Medical Association, the Florida Academy of General Practice, and the Society for Teachers of Family Medicine, Dr. Tudor is currently Assistant Professor, Division of Family and Community Medicine, University of Arkansas Medical Center in Little Rock.

JAMES OSCAR WYNN, M.D., was born in Mineola, New York. He graduated from Cornell University with an A.B. in 1947; and, subsequently, he attained his M.D. diploma from that institution's medical college in New York City in 1951.

His internship was done in that city at the Roosevelt Hospital before serving two years in service of the United States Navy.

Dr. Wynn did a three-year residency in medicine at Duke University Medical Center in Durham, North Carolina, and was board certified in that specialty in 1958. From 1960 to 1967, he was Associate Professor of Medicine at Duke University.

Dr. Wynn is a member of American Society for Clinical Investigation, Endocrine Society, and American Thyroid Association.

He is now Professor of Medicine, University of Arkansas Medical Center in Little Rock.



BOOK REVIEWS

CURRENT DIAGNOSIS AND TREATMENT, Henry Brainerd, M. D., Marcus A. Krupp, M. D., Milton J. Chatton, M. D., Sheldon Margen, M. D. and associate authors. Edited by Henry Brainerd, M. D., Marcus A. Krupp, M. D., Milton J. Chatton, M. D. and Sheldon Margen, M. D., published by Lange Medical Productions, 1970.

This book is 884 pages in length. It reviews current treatment and is a very adequate text on the subjects. Because of the extensive number of articles, the coverage of each subject is very brief. The text does have charts and references. It is definitely recommended if one needs a brief review on therapy.

TUBERCULOSIS  ABSTRACTS

Sponsored by Arkansas Tuberculosis and Respiratory Disease Association

ADVANTAGES OF QUANTITATIVE CULTURES IN DIAGNOSING AND TREATING ACUTE BACTERIAL PNEUMONIA

Quantitative culturing of homogenized sputum led to more frequent isolation of pathogens than did routine qualitative culturing. It also provided pertinent information on superinfection and the effectiveness of antimicrobial chemotherapy.

Identification of the specific pathogen in acute bacterial pneumonia is necessary for rational and appropriate therapy. Routine qualitative bacteriologic cultures of sputum may lead to erroneous diagnosis and inappropriate therapy, particularly in patients with chronic obstructive lung disease.

Because tracheobronchial secretions are bacteriologically sterile, sputum cultures should show growth of only an etiologically significant organism. Rarely are such clear-cut results obtained. Even a carefully produced deep sputum from the bronchi becomes contaminated in passing through the bacteria-laden pharynx.

An organism which can cause inflammation of the lungs should be present in sputum in greater numbers than the contaminating pharyngeal residents. However, pneumonia pathogens, particular *D. pneumoniae* and *H. influenzae* are irregularly distributed in sputum. This leads to inaccurate results when the portions of sputum which contain few or no pathogenic organisms are inoculated onto media. Liquefaction and thorough mixing of sputum permit more uniform sampling.

The present study of 20 pneumonia patients admitted consecutively into two hospitals at different periods was designed to evaluate the usefulness of quantitative cultures of fresh homogenized sputum in the diagnosis of bacterial pneumonia and in following its clinical course. Medical histories, physical examinations, and pulmonary-function tests revealed that the 19 men and one woman in this study had chronic obstructive lung disease. None had received antimicrobial treatment before admission.

PREPARATION OF CULTURES

All sputum specimens collected on admission and at intervals during illness were liquefied, homogenized, and buffered before being streaked onto a culture medium of blood, chocolate eosin-methylene blue, and Sabourand dextrose agar. Estimates of culturable aerobic microorganisms were obtained after 24-hour incubation at 37°C. Routine cultures from 18 were also studied by the usual clinical laboratory techniques.

The quantitative technique led to the isolation of pathogens in all 20 patients whereas the conventional qualitative technique led to isolation of pathogens in only 7 out of 18.

The initial quantitative cultures prepared from sputum taken on admission uncovered predominant colonies (minimum of 10^7 per ml of sputum) of *D. pneumoniae* in 7 patients, *H. influenzae* in 8, predominance of both of these pathogens in 3, and *Staphylococcus aureus* in 2. They also uncovered colonies of other microorganisms in fewer numbers, including *S. virdans,* Candida, and Neisseria.

Quantitative culturing uncovered "superinfection" from gram-negative organisms in 7 patients. In the present study, superinfection was arbitrarily designated as the presence of 10^5 per ml or higher concentrations of microorganisms other than *S. virdans* and Neisseria. In these mixed infections there were actually three times as many superinfecting organisms as all other organisms combined.

PATHOGENS OR CONTAMINANTS?

Other investigators have noted that mechanical homogenization without mucolysis increases the sensitivity of sputum cultures. As has already

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J. Kin Pirtle, M.D.; Patrick W. Monroe, M.D.; Tim K. Smalley, M.D.; John A. Mohr, M.D.; and Everett R. Rhoades, M.D. *American Review of Respiratory Disease,* December, 1969 (Vol. 100).

been noted, quantitative culturing uncovered pathogens in all 20 patients.

A number of factors appear responsible:

In the present study, smaller colony counts of common pharyngeal flora, which more uniform sampling permits, provided a reliable guide for differentiating lower-tract pathogens from contaminating pharyngeal flora.

Actually, the sample plated by routine methods constitutes a very small portion of a sputum specimen. Identification of the predominant organisms is necessarily limited to the microorganisms therein. This problem of adequate sampling may be the most important source of error in routine cultures.

Homogenization overcomes the problem in providing culture samples of different portions of a single specimen. Other workers have shown that *D. pneumoniae, H. influenzae,* and *S. aureus* are not always isolated more frequently from purulent than the mucoid portions of sputum.

Previous studies reveal that a much greater yield of *H. influenzae* is obtained from saline-washed sputum than unwashed specimens from the same patients. Apparently, inhibitory factors are removed or destroyed by the washing procedure. In the quantitation procedures, saline diluting solutions appear to have a similar effect.

One study revealed that a combination of *N. catarrhalis* and mucin inhibited *H. influenzae* growth in unwashed sputum, while the liquefying agent, N-acetycysteine, promoted its recovery. In addition, relatively slow growing *D. pneumoniae* and *H. influenzae* in diluted sputum are not as easily masked by faster growing organisms, such as gram-negative bacilli.

Quantitative sputum analysis provides information as to whether new organisms appearing in the sputum are responsible for true superinfection. When colony counts are low (10^5 or less), use of more toxic antimicrobial agents is usually less urgent than when this information is not available. If the colony count is high, clinical evidence of superinfection will develop in 30 to 50 per cent of these patients. Quantitative analysis also reveals pertinent information concerning the efficacy of antibacterial therapy and a better understanding of the cooperative, competitive, and antagonistic interactivities of bacteria.

The high incidence of *H. influenzae* and *D. pneumoniae* in sputum from pneumonia patients in this study may have been related to the high incidence of underlying lung disease. These are the two most common pathogens associated with exacerbations of bronchial infection in patients with chronic lung disease. Colonization of at least one of them was found on admission in all but two patients who were also found to have chronic lung disease, suggesting that chronic lung disease is common in patients admitted with pneumonia.

There appeared to be significant correlation between elevated bacterial colony counts and the presence of clinical disease. Quantitation culture procedure was found to be rapid and simple and yielded consistent results. Further studies of larger numbers of patients are needed to define more precisely the concentrations of organisms in the sputum that may be significant in various circumstances.



Association of Laundry Starch and Clay Ingestion With Anemia in New York City

H. A. Roselle (155 N Dean St, Englewood, NJ)
Arch Intern Med 125:57-61 (Jan) 1970

Nonpregnant patients in New York City had iron deficiency anemia and ate laundry starch or clay. Although this form of pica is common in the southern and western United States, it is less frequently considered in the northeast. Starch and clay ingestion varied from 250 gm/day to 1,300 gm/day and the average hemoglobin value was 6.2 gm/100 ml. All patients received iron but lack of cooperation allowed only three of ten patients to be followed up. They had normal hemoglobin values while continuing the ingestion of clay or starch. This suggests that the iron deficiency anemia in these adults was not a cause of pica but an effect. Cultural tradition or habit is probably another mechanism for this form of pica. Anemic, nonpregnant individuals should be questioned about pica, particularly clay or laundry starch ingestion.

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